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ABSTRACT

The Employer-Based Career Education Program in Tigard, Oregon was designed to have students participate in a variety of individualized learning activities. Most of the 29 students completed eight employer site explorations, spent 108 days in learning experiences on three employer sites, completed seven projects and five single objectives, were tutored in two skills, and participated in many hours of independent study, seminars, counseling, and enrichment activities. In tests of student growth, the students remained about the same in basic skills and self-concepts, but reached competence level in a number of survival skills, and improved their writing skills. Seniors reached a high level of career maturity. As judged by employers, students improved in their work performance, adherence to work schedules, acceptance of responsibility, interest in and enthusiasm for work, judgment, ability to work with others, and ability to learn through work experience. All those involved were enthusiastic about the program. The evaluation lists the project's goals and an evaluation of the progress made toward each goal. Evaluation questions and statistical data are presented and discussed. The presentation of program results include data on: employer learning sites; student learning experiences; student growth; employer, parent, and student appraisal; and outside evaluation. (Author/PR)

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EMPLOYER-BASED
CAREER EDUCATION
FY 73 EVALUATION REPORT
SEPTEMBER 1973

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EMPLOYER-BASED CAREER EDUCATION

FY 73 EVALUATION REPORT

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FY 73 EVALUATION REPORT

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I. FOREWORD

Community Experiences for Career Education (CE)₂ in Tigard, Oregon, is one of four sites in the country where Employer-Based Career Education (EBCE) is being tested under the auspices of the National Institute of Education. In a very real sense, the formulation and field testing of this alternative educational system has nationwide implications. Reporting both the successes and failures of this program is an ethical as well as a contractual obligation of research and development.

Questions evaluation must answer include:

- Which strategies work best?
- For what kinds of students?
- Under what circumstances?

Without answers to questions like these, other researchers and practitioners have no basis for deciding whether implementation of this program is worthwhile and what other problems remain to be solved.

The framework chosen to meet evaluation requirements is outlined on the following pages. It should be noted that evaluation activities during the 1972-73 developmental program year have been primarily formative in nature. The major goal for evaluation was to establish a system for providing feedback of appropriate and relevant information to program management on the extent to which program goals and objectives were being met as the year progressed. To this end, program goals and objectives were systematically organized and a series of questions generated around them. Periodic progress reports on each of these questions were provided to program management throughout the year.

The body of the Fy 73 Evaluation Report is divided into six parts. Part II, which follows the Foreword, is an Evaluation Summary. Part III presents the rationale for the evaluation model used. Part IV is composed of accounts of progress made toward certain salient program goals during this first formative year. The data bases for this section were periodic progress reports made throughout the year and data collected to support them. Part V addresses the remainder of the program goals--those that lend themselves to a summative account of program outcomes. Part VI presents data on the operational costs of the program.

This evaluation report was prepared by Marshall Herron, evaluation specialist; Ralph Van Dusseldorp, evaluation consultant and Diana Williams, research assistant. In preparing the report, evaluation staff have attempted

to be as objective as possible, presenting facts concerning the program in a manner that will allow the reader to make subjective judgments based on those facts.

Special appreciation is expressed to the (CE)₂ staff who spent many hours in recording and furnishing data from which this report was compiled.

II. EVALUATION SUMMARY

All the evidence gathered for evaluation of the Northwest Regional Educational Laboratory (NWREL) project points to a highly successful program, both in terms of the development of the components of the EBCE system and in terms of student growth. A year ago, the project had a staff, a building, 25 students and a commitment to the formidable tasks of developing a governance system, securing employer cooperation, and developing an individualized, interdisciplinary instructional system through which learning activities would take place primarily on employer sites. These tasks involved dealing with a myriad of related problems and procedures --legal implications, public relations, insurance, student transportation, student records, reports to parents,--and to do so with few previously developed models to draw on. During the first year of operation the major goals of the project staff were met: a career education system which was truly employer based and geared to the needs of individual students was established.

The EBCE system was designed in such a way that students would participate in a variety of different individualized learning activities. Evidence shows that the students did participate at the level intended in those activities. The average student completed eight employer site explorations and three employer site learning experiences, spent 108 days in learning experiences on employer sites, completed seven projects and five single objectives, was tutored in two skills and participated in many hours of independent study, seminars, counseling and enrichment activities.

In terms of student growth that was measured during the year, the students remained about the same on basic skills as measured by the Comprehensive Test of Basic Skills (CTBS) and also remained about the same on self-concepts as measured by the Tennessee Self-Concept Test. The seniors reached a high level of career maturity as measured by the Career Maturity Inventory. The students reached competence level in a number of "survival skills" and improved their writing skills. As judged by employers, students improved during the year in their adherence to work schedules, acceptance of responsibility, interest in and enthusiasm for work, judgment, ability to work with others, ability to learn through work experience and work performance on employer sites.

Students, parents and employers alike were enthusiastic about (CE)₂. Students particularly liked the freedom and flexibility of the program, the opportunity for independent study it afforded and the fact that learning activities were tailored individually for them. Further evidence of the students' positive feelings for the program is reflected in the fact that of 29 students involved during the year, only two students dropped to return to their original high school and only one dropped out of school completely. This is particularly remarkable when it is considered that most of the 29 students were not school oriented.

Parents were particularly favorable toward the program. Of the 15 responding to a questionnaire, nine felt that their child's educational experience was stronger than last year, six felt that it was about the same and none felt that it was weaker. Thirteen indicated that they would recommend the program for other students. Some parents did, however, express some concern about student freedom and lack of strict discipline in the program.

Employer enthusiasm for the program was indicated by their willingness to contribute facilities and time to student learning experiences. They became intimately involved with the program and the students and typically spoke in terms of "our program" and "our students."

The outside evaluators were very favorable in their appraisal of the program, pointing out as particular strengths the sound curricular design, the individualization of instruction, the high degree of motivation on the part of students and the relevance of learning activities to student goals.

This is not to say that there was a paucity of problems in the development and implementation of systems and procedures. False starts were made. Procedures were developed that, upon implementation, were found to be inappropriate and redesigned and tried again and again until they worked. Nor is this to say that the system is now perfect. Based on the results of the first year of operation, additional refinement of systems and procedures needs to be done, and all the systems and procedures need to be further tested in a stable environment. The past year's operation provided positive answers to a number of questions:

Will employers be willing to contribute time and facilities for the education of youth?

Can learning plans to meet individual student needs and interests be developed?

Will students thrive and learn in an individualized, self-directed learning environment?

Can learning take place on employer sites?

Questions that remain to be answered include:

Is the program cost effective or can it be made to be?

How far are employers willing to go in providing time and facilities for student learning?

Can the fundamental basic skills be learned on employer sites?

Can individualized student learning plans be more efficiently produced?

How can such a system provide for the social interaction needs of students?

What type of student will benefit most from participation in the EBCE system?

III. RATIONALE FOR THE EVALUATION MODEL

Evaluation is the process of delineating, obtaining and providing useful information for judging decision alternatives...the process of ascertaining the relative values of competing alternatives.*

Management can be defined as the process of establishing objectives, formulating and implementing a plan to achieve those objectives and reacting to deviations between the actual and desired results. All of these management activities require that decisions be made. The decision making process can be broken down into four distinct stages: (1) awareness that a decision is needed, (2) design of the decision alternatives, (3) choice of one of the alternatives and (4) action on the chosen alternative. If effective decisions are to be made, useful information must be provided at each of the four stages.

An essential and continuing function of any evaluation program, then, is to provide information to create an awareness that decisions need to be made and to provide relevant and complete information about decision alternatives and their consequences.

In an almost totally new endeavor such as Employer-Based Career Education an evaluation component must provide information to support both short-term and long-term decision making processes. Long-term decisions are those that deal with overall value and effectiveness of a project and are essentially product oriented (summative). Short-term decisions are based on information relevant to the further development of the project and are both product and process (formative) oriented. This short-term feedback loop is a critical element in the developmental phase.

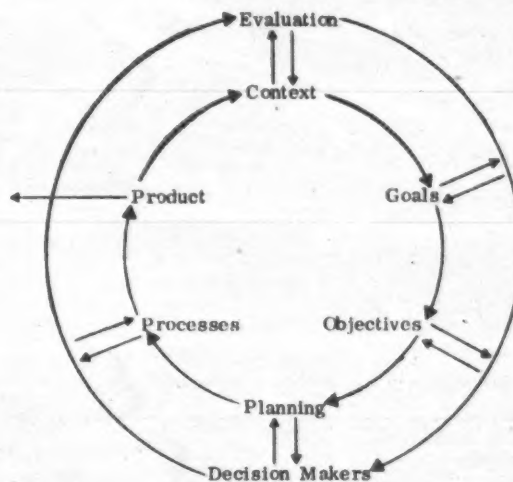
Formative components may involve events, procedures, empirically developed forms and other such products, as well as the roles/functions of those responsible for development or implementation of these "products." There are many such components at any given point in time. A major problem for evaluation is to identify those components which are critical to a set of previously designated, desirable outcomes. Data collection relates, then, to the attempt to document those events which are either productive or counter-productive to achieving the desired outcomes.

Any instructional system occurs within a specific context--an environment that includes the needs to be fulfilled by the system, certain positive

*Daniel L. Stufflebeam, et al., Educational Evaluation and Decision Making (Bloomington: Phi Delta Kappa, 1971), p. xxv.

factors such as material resources to support the system and other mitigating factors such as political pressure groups or general public opinion. Within these parameters, overall goals are established for the system. Ideally, the goals are then translated into precise and detailed objectives stated in measurable performance terms. There then occurs a planning phase in which resources are allocated and procedures anticipated for translating conceptual schemes into operational activities. Processes are then implemented, resulting in certain products or outcomes of the system as implemented.

If evaluation is to provide information useful for choosing among a variety of operational alternatives, it must be concerned with gathering data at each phase of the above cycle. These data must then be provided to appropriate decision makers--those charged with management accountability for the system, so that comparison may be made between "what is" and "what ought to be." This model allows not only for change in procedures but for reflective examination and possible change in context, goals or objectives for the system. The diagram on this page illustrates a model for NWREL EBCE Evaluation.



The outward arrows on the diagram represent data gathered by the evaluation effort at each phase of the cycle. Inward arrows represent input or adjustment at each phase by the appropriate decision makers. The one-way arrow from the product phase indicates that products, once produced, usually are not open to change. Summative information about the product is fed back into the system, however, so that changes may be made in the rest of the cycle that can result in change in future "products." Products are not subject to direct change through evaluation. The product can be changed only indirectly, through the manipulation of other phases of the system.

The Employer-Based Career Education project of the Northwest Regional Educational Laboratory was viewed at two levels from the point of view of this evaluation "model": (1) the Laboratory, or R&D level, and (2) the program, or operational, level in Tigard. At the project level, the system contains all of the elements or phases previously identified. The product of this effort was the program at Tigard. The Tigard program, in turn, also contains all of these phases. The desired product in this case is student achievement.

The first task of the evaluation effort was to determine which phases of the project would be included in this evaluation plan. Both "context" and "goals" for the NWREL project were taken to be given--i.e., not open to change--hence not providing data to the evaluation effort. To suggest or to attempt to effect change in national priorities or the generally accepted educational goals out of which the EBCE concept was generated was not taken to be an appropriate function of this evaluation effort. Nor was it considered to be within the scope of this effort to generate questions about the adequacy of preliminary planning efforts or the allocation of federal funds for the experimental testing of the EBCE concept. On the other hand, examination of NWREL performance objectives and procedures for creating a test model of the EBCE concept, as well as examination of the model so created, were all considered to be relevant functions of general program evaluation.

At the R&D level, evaluation data were gathered concerning objectives, planning, process and product--the product being the program at Tigard. At the program level (Tigard) evaluation data were gathered concerning the context, goals, objectives, planning, resources, process (including in-house product evaluation) and product. The Tigard staff was considered to be responsible for assessing student growth. NWREL staff gathered data on those assessment procedures.

The first task of the evaluation effort was to provide a relatively constant framework within which productive program evolution could occur through the articulation of goals, objectives and questions. Of necessity, therefore, the evaluation effort during the first program year concentrated on what appeared to be relevant questions of the best formative nature, rather than on instrumentation. That is, instrumentation and procedures were varied, whenever necessary, to get information relevant to specific, predesignated questions directly related to stated goals and objectives of the program.

Regular evaluation reports written during the year were of three types. Regular reports were submitted according to a prearranged schedule. As the need arose reports were also made on request of R&D or (CE)₂ management concerning special topics or issues. Other reports were initiated by the evaluation staff from time to time as circumstances dictated.

IV. FORMATIVE EVALUATION OF PROJECT GOALS

Following is a listing of the critical goals of the NWREL EBCE project along with an evaluation of progress toward the accomplishment of each goal. This constitutes the formative evaluation of the EBCE project.

GOAL

TO DEVELOP A GOVERNANCE SYSTEM THAT PLACES EDUCATIONAL MANAGEMENT DECISIONS IN THE HANDS OF THOSE WHO DIRECTLY AND CONSCIOUSLY REPRESENT THE ROLES OF EMPLOYER, LABORER, STUDENT AND PARENT.

EVALUATION QUESTIONS

Was a governing board formed?

Beginning in March 1972, a series of meetings was held by NWREL to seek from the community and business leaders their recommendations and questions about how an EBCE program should be set up, how it should function, how employers would be utilized and other issues of general concern. A planning group was formed primarily from those attending these initial meetings. This planning group worked with NWREL staff in determining the actual configuration of the pilot EBCE model and the strategy for its implementation.

One of the first tasks undertaken by the planning group was to determine the legal procedures necessary for incorporation of a public, nonprofit corporation to administer and manage the program. Three people from this group were nominated to form a committee to work with the NWREL attorney in executing the legal steps for securing the Certificate of Incorporation. On August 29, 1972, the State of Oregon certified the legal formation of Community Experiences for Career Education, with the acronym of (CE)₂.

Do the members of the board represent the roles of employer, laborer, student and parent?

Bylaws proposed by the planning group (and later ratified by the Board) provide that membership in the corporation is for any individual institution, organization or agency interested in the work of (CE)₂. Membership can be gained by filing a Letter of Intent to participate. Board member terms of office were originally set up as one, two or three years to overlap and provide continuity. In a meeting held in the spring of 1973 the Board changed the Bylaws to extend all terms of office--except

those of the student and parent--to three years to coincide with the projected length of the pilot program. Board membership and terms of office are currently as follows:

1 Student	6 months
1 Parent	1 year
1 Public school representative	3 years
6 Employers who provide learning settings for (CE) ₂ students	3 years
1 Labor representative	3 years
1 Member-at-Large	3 years

Five of the original planning group members (four employers and one labor representative) were nominated and selected for service on the (CE)₂ Board. Mr. Tom Noble of the Tigard branch, U.S. National Bank of Oregon, was elected chairman.

What are the responsibilities of the Board?

The (CE)₂ Board of Directors holds legal responsibility for all staff and student activities of the (CE)₂ program. The Board met officially each month except December, February and April. Special conferences and informal retreats were also held. Activities of the Board this year included:

- Reviewing curriculum components as they were developed or proposed
- Approving graduation requirements
- Developing strategies for engendering employer support and recruiting employers
- Approving Letter of Agreement with Tigard School District
- Approving subcontract between NWREL and (CE)₂
- Reviewing "Prospectus" submitted to NIE and allocation of staff time to priorities
- Discussing need for student accountability system and approving prototype

- Reviewing insurance coverage to make provision for complicated coverage needs of (CE)₂ program
- Procuring learning center facilities and providing for transportation by leasing van
- Considering legal issues surrounding experimental high school alternative program
- Accepting responsibility for financial accountability and implementing system for fulfillment
- Participating in staff hiring
- Conducting review of alternatives for length of school year
- Adopting Bylaws and selecting new members

GOAL

TO SELECT A STUDENT POPULATION REPRESENTATIVE OF A TYPICAL CROSS SECTION OF HIGH SCHOOL STUDENTS IN SUBURBAN TIGARD

EVALUATION QUESTIONS

To what extent was the initial (CE)₂ student group representative of the students in Tigard High School?

In the early stages of the project it was decided that EBCE, as tested in Tigard, would be a volunteer program. Since this mode automatically involves students and their parents in decisions based on complex intrinsic and extrinsic personal motives, it becomes a major determining factor in the composition of the initial student group. This decision also dictates the need for careful development and documentation of recruitment strategies. Early in April, a flyer was circulated to all sophomores and juniors at Tigard High School. This flyer explained the general intent and philosophy of EBCE and announced an assembly to be held in mid-April for those interested in more information. Counselors and teachers were also provided with advance information about the program. Approximately 100 students asked for applications after the assembly. This comprised more than 10 percent of the combined sophomore and junior classes. Each of these students was interviewed briefly to make sure any questions they had were answered at the time they handed in their applications for entry to the program. This number was reduced by one-half through selecting every other name from an alphabetical listing. Through further individual and group meetings with students and their parents, this number was further reduced to 25 participants and five alternates. As can be seen from the following tables, the 25 (CE)₂ students so selected adequately reflect the range of the Tigard High School student body on the measured variables. As a whole, however, the (CE)₂ group ranked lower than Tigard students in general on measures of scholastic aptitude, school achievement, self-concept and some measures of socio-economic status.

What are the characteristics of the selected group of students?

As a group, the 25 original (CE)₂ students ranked lower than Tigard High School students on such indicators and predictors of school success as grades, academic aptitude tests and socio-economic backgrounds. The group also ranked relatively low in comparisons with national norms on standardized measures of achievement and self-concept. However, the (CE)₂ group contained a wide range of achievement, academic aptitude and socio-economic background.

Table 1

Distribution of (CE)₂ Students by Sex and Grade Level

	Boys	Girls	Total
Grade 11	10	8	18
Grade 12	3	4	7
Total	13	12	25

Table 2

Grades Earned During 1971-72 School Year
by (CE)₂ Students
as Compared with Tigard High School Students

Percent of Grades Earned

	A	B	C	D	F
(CE) ₂ Students	20	22	30	12	16
All Tigard High School Students	37	27	22	10	4

The grade point average of (CE)₂ students ranged from .80 to 3.69, with a mean of 2.24. This compares to a mean of 2.90 for a sample of 112 randomly selected Tigard High School students. This difference is significant at the .05 level.

Table 3

Scores on School and College Abilities Test (SCAT)
for (CE)₂ Students *
as Compared to a Random Sample of Tigard High School Students

SCAT Results

	SCAT Verbal	SCAT Quantitative
(CE) ₂ Students Group Mean	48.3	49.0
Range of Standard Scores for (CE) ₂ Student Group	34-66	32-62
Tigard High Random Sample Mean	50.4	51.5
Range of Standard Scores for Random Sample Group	27-72	31-73

Metro Standard Norm Mean = 50, S.D. = 10

* SCAT Scores were available in school records for 21 of the 25 (CE)₂ students who started in September, 1972.

Table 4

(CE)₂ Students Above and Below
Portland Metro Norm Mean SCAT Score

	Verbal	Quantitative
(CE) ₂ Students Above Mean	6 (25%)	11 (46%)
(CE) ₂ Students Below Mean	18 (75%)	13 (54%)

As shown below, over half the fathers of Tigard High School students were employed as professionals, managers or administrators, while only a third of the fathers of (CE)₂ students were similarly employed. Fourteen percent of the mothers of Tigard High School students were employed as professionals, managers or administrators, while none of the mothers of (CE)₂ students were employed in these occupations. In addition, 57 percent of the (CE)₂ students came from families with an annual income of less than \$15,000, with 52 percent of their fathers and 76 percent of their mothers reporting no education beyond high school. Comparative figures for these data are not available for all Tigard High School students, but the data on parent employment would suggest that these figures may also be below the general Tigard norm.

Table 5

Parents' Occupations

	Fathers of Students at T. H. S. (CE) ₂		Mothers of Students at T. H. S. (CE) ₂	
Professionals, Managers Administrators	52%	33%	17%	0%
Other	48%	67%	83%	100%

The (CE)₂ students were given the Comprehensive Test of Basic Skills (CTBS) during the fall of 1972. As shown in Table 6, (CE)₂ students as a group scored low in achievement, but the achievement range within the group was quite broad. Comparisons are with national norms.

Table 6
(CE)₂ Student CTBS Scores

	Reading	Language	Arithmetic	Total
Above Median	11 (44%)	7 (28%)	10 (40%)	7 (28%)
Below Median	14 (56%)	18 (72%)	15 (60%)	18 (72%)
Group Percentile	39	33	35	32
Percentile Range	6-96	3-99	3-80	2-84

In May 1973, forty students from each of the sophomore, junior and senior classes were chosen at random to help establish local norms for two of the instruments used in the (CE)₂ program. These instruments were the Tennessee Self-Concept Scale, which was administered pre and post to (CE)₂ students in the fall and spring, and the Self-Directed Search, which was used to aid students in identifying their career interests. Local school officials requested that participation be on a voluntary basis and that parents of each participant be contacted in advance. These conditions were fulfilled and the tests administered during four inschool testing sessions.

The 23 sophomores, 26 juniors and 25 seniors volunteering to take the tests were compared to the 112 students for whom grade point average and scholastic aptitude (SCAT) test scores were available to test for significant sample bias in favor of academically oriented students (i.e., not "test shy"). While both mean GPA and mean SCAT scores were higher for the 74 volunteers than for the total random sample, t Tests of the differences in the means were not significant at the .05 level.

While adolescents generally score below published standardized norms on the Tennessee Self-Concept Scale, the (CE)₂ group was quite low by comparison. As with the achievement test scores, the individual range was wide.

Table 7

(CE)₂ Student Self-Concepts Compared to Self-Concepts
of a Random Sample of Tigard High School Students

Paraphrased Meaning of Scale	<u>(CE)₂ Students</u>		<u>T. H. S. Students</u>	
	Percentile	Range	Percentile	Range
Self-Criticism	58	10-95	51	2-89.9
What I Am	12	1-80	28	1-95
How I Feel About What I Am	25	1-84	40	3-99
How I Think I Act	7	1-60	23	1-96
My Physical Self	12	1-62	27	1-95
My Moral-Ethical Self	11	1-78	30	1-98
My Personal Self-Esteem	38	3-96	46	1-97
My Family Self	6	1-84	26	1-98
My Social Self	24	5-80	32	1-99
Total Self-Concept	12	1-62	28	1-99

The Self-Directed Search is usually an individually administered and interpreted instrument; hence display of group data is awkward at best. It is possible, however, to obtain group profiles utilizing a scoring procedure identical to that used by Holland in scoring the individual instruments themselves. A weighted score, and hence a rank ordering for each code letter, may be obtained as follows. The number of times the letter occurs in first place in individual students' three-letter code designation is multiplied by three. The number of times the letter occurs in second place is multiplied by two, and the number of times it occurs in third place by one. These products are summed over all students for each letter, providing six composite scores that can be arranged in rank order or graphed.

Table 8

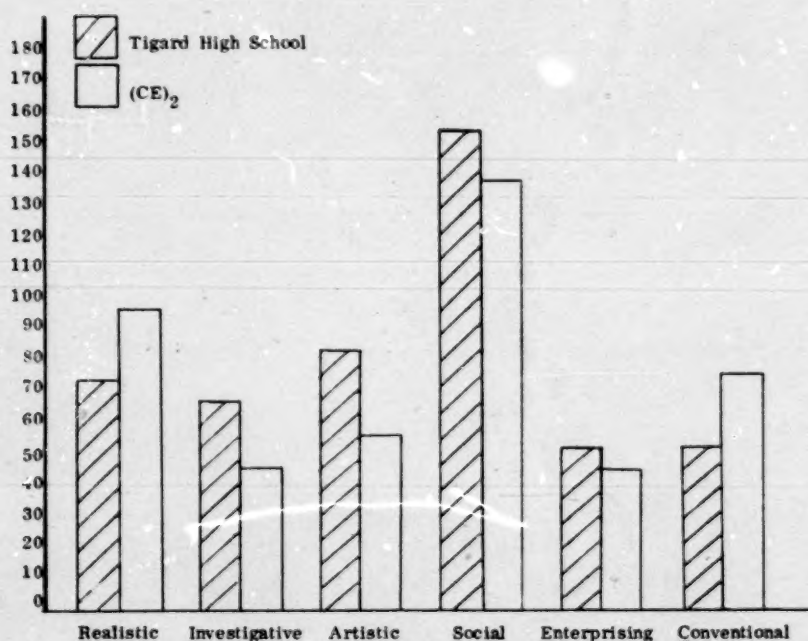
Rank Order of SDS Letter Codes for
(CE)₂ and Tigard High School Students

<u>Place</u>	<u>73 Tigard High School Students</u>	<u>28 (CE)₂ Students</u>
1st	S (social)	S (social)
2nd	A (artistic)	R (realistic)
3rd	R (realistic)	C (conventional)
4th	I (investigative)	A (artistic)
5th	C (conventional)	E/I (tie between enterprising and investigative)
6th	E (enterprising)	

The following graph is scaled so that comparisons of relative proportions are possible. The shaded bars represent point values for each letter for Tigard High School students. The scale for these bars is on the left side of the graph. Unshaded bars represent point totals for each letter for all of the 28 (CE)₂ students who filled out the SDS over the course of the school year. These totals were multiplied by the ratio of the number of THS students to (CE)₂ students.

PROFILE OF SDS RESULTS FOR
(CE)₂ AND TIGARD HIGH SCHOOL STUDENTS

SDS Letter Code	THS	Point Totals	Scaled Total
		(CE) ₂ x Scale Factor	
R	73	$37 \times 73/28 =$	96
I	66	$17 \times 73/28 =$	44
A	81	$22 \times 73/28 =$	57
S	154	$53 \times 73/28 =$	138
E	51	$17 \times 73/28 =$	44
C	54	$28 \times 73/28 =$	73



Both (CE)₂ and Tigard High School students were highest on Holland's "Social" scale and lowest on the "Enterprising" scale. The most noticeable differences occur in the other four scales, with (CE)₂ students expressing higher preferences for "Realistic" and "Conventional" activities, and Tigard High School students showing stronger interest in "Artistic" and "Investigative" activities.

GOAL

TO DESIGN A CURRICULAR STRUCTURE THAT PROVIDES FOR THE CREATION OF LEARNING ACTIVITIES WHICH:

- ARE INTERDISCIPLINARY
- ARE INDIVIDUALIZED TO SPECIFIC STUDENT NEEDS, INTERESTS AND LEARNING STYLES AND
- OCCUR PRIMARILY IN EMPLOYER SETTINGS, SECONDARILY IN OTHER COMMUNITY SETTINGS

EVALUATION QUESTIONS

Is there a curriculum design that specifies procedures for creating learning activities which are interdisciplinary, individualized and which occur primarily in employer settings? Is this design documented? Has it been implemented?

As early as May 1972* documents detail a curriculum structure built primarily around eight goal areas (later called "study targets"). These were reading, writing, mathematics, personal management skills, critical thinking/problem solving, functional citizenship, personal/social skills and aesthetic awareness. Each of these major areas was divided into elements that, at least by definition, tended to cross over traditionally narrow definitions of academic disciplines. This was particularly obvious in the "functional citizenship" area, where questions of conservation of natural resources and environment combine elements of the natural sciences and social sciences.

By the time students arrived in September, the curriculum had evolved into three separate but related components. The eight major goal areas remained, but two specific areas were singled out for more detailed treatment. These were the "competencies"--survival skills that everyone in our society needs and should have by the time they graduate from high school--and a career/life skills component related to employability factors. These were delivered via performance objectives, most of which would be grouped into "projects" unique to each student's interests, abilities and needs as revealed by early student assessment results.

Placements on employer sites were organized into four categories to complement this curricular structure. These were: Level A--three- to five-day exploratory experiences; Level B--multi-week learning experiences

*Request for approval of pilot program sent to the Oregon Board of Education, May 31, 1972.

in more depth; Level C--indepth experiences at a particular job or trade (a pre-apprenticeship); Level D--placements on a site for the purpose of completing work on a particular learning project, rather than looking at a particular career area per se.

By the middle of October 1972, the curricular structure was specified in great detail, and the bugs were being worked out of the delivery and recordkeeping systems. A document dated November 22, 1972, describes these procedures and the individualization process of joint parent/student/learning manager goal setting for each student in each component of the curriculum. The basic structure of the curriculum changed little after this date. Most effort was subsequently directed to implementation strategies.

What proportion of the learning activities created via these procedures satisfies designated criteria for "interdisciplinary" and "individualized" curriculum?

Instruction at (CE)₂ is tailor-made to the needs, interests and learning styles of each student. Initially, individual learning goals were set with each student through a process of negotiation involving student, learning manager and the student's parents. As the student began a long-term learning experience at each employer site, his supervisor at the site also identified areas in which growth for the student could and should occur, and a special project was written for him or her. Hence, all learning programs satisfied program criteria for individualization.

The (CE)₂ concept of individualized instruction does not include group learning activities, however. In instances when the student could profit best by taking a class at the community college, a training program at General Motors Corporation or a group tutoring session, the group activity was chosen to meet that particular need. During the 1972-73 program year, some group projects--such as "Motivation for Career Success" and a comparative study of "alternative schools"--were also written for those students who indicated to the learning manager that they wished to undertake the same learning task. A major question for evaluation to monitor next year is the extent to which this level of individualization can be maintained and still be cost effective.

The criteria for interdisciplinary instruction are more complex to deal with. In the curriculum as defined by (CE)₂, instruction is not compartmentalized into "subjects" that are learned separately. Instead, the student's learning program is designed to allow him to gain knowledge in a variety of disciplines at one time. For example, a student assigned to an employer site may gain learning credit in math as applied to tools, measurements, and estimations; English necessary for writing required reports; critical thinking as part of solving job-related problems; science necessary for

understanding basic principals of electricity; communications skills while interacting as a member of a work team and specific electrician's skills in order to install conduit at the plant.

A November 28, 1972, document attempted to provide operational criteria for insuring the creation of interdisciplinary learning plans. This document suggested that all projects should be generated in such a way as to include work in at least two major goal (or study target) areas along with career/life skills and include specific objectives in two of the three Basic Skills of reading, mathematics and communications. Early in March, 1973, analysis of 68 showed that none of them satisfied these criteria. A check with operations staff revealed that this cross-referencing was too complex and time consuming to be workable. A meeting of all staff resulted in revised criteria in which projects were to be generated in only one major goal area, but would include activities (not specific objectives) in two of the three Basic Skills.

While the theoretical argument for the interdisciplinary nature of (CE)₂ still holds, the operational definition is in a state of flux and will undergo further refinement as the curriculum is revised.

One problem identified by evaluation staff that relates to this question is the need for a "quality control" mechanism of some kind on the generation of interdisciplinary projects--that is, some mechanism to aid learning managers when they are operating outside their own area of expertise.

What proportion of the learning activities created by learning center staff are designed to occur primarily in employer settings?

As of June 1, 1973, a count of projects and single objectives in the Master Record Book yielded the following proportions of activities to be carried out primarily at a) employer sites, b) learning sites within the community at large or c) the learning center.

	Employer Site	Community Site	Learning Center	Total
Projects	52	42	42	136
Single Objectives	0	16	107	123

GOAL

TO DESIGN A STRATEGY BY MEANS OF WHICH SUPPORT CENTER STAFF MAY EXTRACT ELEMENTS OF ACTIVITIES OCCURRING ON EMPLOYER SITES FROM WHICH TO BUILD INDIVIDUALIZED LEARNING PLANS

EVALUATION QUESTIONS

Is there a procedure for extracting learning elements from employer sites and using them to build learning plans for students? Is the strategy documented? Has it been implemented?

The major part of this effort revolved around procedures involving the Learning Site Analysis Form. This form first appeared early in July 1972, as a list of "action verbs" which might be used to analyze what individual employers did on their jobs that could be translated into learning objectives for students. Description of procedures contained in an evaluation report of February 14, 1973, indicates that employer utilization had settled into the following stable pattern.

The employer relations specialist, who was responsible for locating and contacting receptive employers and obtaining their agreement to host students, worked with the employer to help identify learning experiences at that site. During A Level explorations on employer sites, employers were asked to expose the student to experiences that would allow him or her to see the overall operation of the business and/or job being explored, as well as to become familiar with the educational requirements, working conditions and benefits associated with the business/job.

When the student requested a B Level placement, the employer relations specialist assisted the employer supervisor in analyzing the site for potential learning activities. As a first step, they met at the site and identified all the tasks normally performed on that job, as well as those specific tasks a student would be able to perform. During this meeting the Learning Site Analysis Form, comprised of lists of action verbs, was used to help the employer relations specialist and the employer supervisor identify specific tasks performed.

As soon as the Learning Site Analysis Form was completed, it was given to the learning manager, who wrote from it a series of learning objectives capable of being performed by the student during the time he or she was learning on that site. These learning objectives were returned to the employer supervisor, who checked them for accuracy, reorganized them so that the objectives were listed in order of priority and ratified them. Any changes in the learning objectives were noted by the employer relations specialist, and the revised list was returned to the learning

manager, who rewrote them in the form of a project which specified--in addition to objectives--such information as the products the student was expected to produce, steps to be taken in completing his or her work on the project, materials to be obtained and completion date. Before the project was typed in final form, the student was asked to read and ratify it.

A project, if satisfactorily completed, met one of the graduation requirements. If the student's work on the project was unsatisfactory, additional work was required. The student could either renegotiate the completion date of the project, continue to work on the project until the requirements for completion were met or drop the project entirely. In some cases, the learning manager arranged for special tutoring to help a student complete certain objectives in his or her project. Because the project was based on activities performed at the employer/community site, the supplies and/or equipment to be used in completing it were usually located there. Employers willingly made these backup materials available to students.

GOAL

TO DEVISE A TRAINING STRATEGY FOR HELPING EMPLOYERS DEVELOP AND/OR IMPROVE THE KNOWLEDGE, SKILLS AND ATTITUDES NEEDED TO SUPPORT AND EXTEND STUDENT LEARNING ACTIVITIES

EVALUATION QUESTIONS

Has an employer training strategy been planned? Has it been documented?
Has it been implemented?

Implementation of a total training strategy per se was not accomplished this year. A number of meetings with employers did take place which included activities that would be considered training activities. They were primarily informational in character, orienting employers to the program and defining the role of participating employers. These meetings were held prior to the development of a long-range plan. A management review memo from R. Hagans to J. Beier and J. Reetz dated January 3, 1973, specifies some of the reasons why such a plan had not been generated by that time. A rough draft proposal of a "training model" for employers, staff and students dated January 15, 1973, was reviewed by an employer/staff task force at an April 10 luncheon meeting. Recommendations from this task force group were used in producing a revision of this document dated April 13, 1973. Further refinements of the plan were to be made this summer in conjunction with other program revisions. The most recent efforts were directed toward development of a coherent and coordinated training model for staff and students, as well as for participating employers.

GOAL

TO DETERMINE OPERATIONAL COST EFFECTIVENESS OF (CE)₂ OPTION
AND COMPARE TO THOSE OF EXISTING SECONDARY EDUCATION PROGRAMS

EVALUATION QUESTIONS

Is there a strategy for determining the per-pupil instructional costs and for relating costs to effectiveness and benefits as the program develops?

During the initial program year, a format for comparing operational costs of (CE)₂ with those of "standard" schools was developed. The preliminary report of March 1973, entitled A Model for Cost Comparisons in the EBCE Pilot Project, includes an initial projection of categories in which comparisons seem appropriate, analysis of actual operational time spent by (CE)₂ staff and collection of costs by category for selected secondary schools. Although a trial run on costs was attempted, at least two major complicating factors make the data difficult to interpret:

In the first place, although (CE)₂ staff members are designated as "operational staff" responsible to the (CE)₂ corporation for program operation, they have been, and probably will continue to be, heavily involved in the development of prototype systems. In the trial run of the cost comparison model, the separation of these costs was attempted by a team of consultants through an analysis of how (CE)₂ staff members actually spent their time. This analysis will need to be refined considerably next year.

Secondly, the preliminary analysis focused specifically on identifying appropriate categories and types of schools with which comparisons ought to be made. Data used from those schools selected for comparison were reported by school districts to state agencies. Much more careful analysis is needed as to what actual costs schools charge and as to the categories identified as appropriate for comparison purposes.

A more complete description of the preliminary cost analysis is given in Part VI of this report.

GOAL

TO DEVELOP A SET OF PERFORMANCE-BASED "MINIMUM COMPETENCIES" WHICH MUST BE ATTAINED BY ALL STUDENTS IN THE PROGRAM

EVALUATION QUESTIONS

Was a set of minimum competencies developed?

This objective was accomplished very early in the program year. The list of 14 competencies (see Appendix A) was developed through a series of meetings of (CE)₂ and NWREL staff, employers, students and parents during the summer of 1972. They represent community designated "survival" skills that cover such aspects of daily living as the economic, legal-political, health-safety, property maintenance, recreational and occupational "coping" skills and are stated in measurable performance terms. The list has been revised several times and was refined this summer to be sure that the competencies mesh smoothly with other components of the curriculum.

Are the means of certifying when a student has reached acceptable levels of competence specified?

The criteria and means of certification were stated specifically and separately for each of the 14 competencies.

Are certifying procedures comparable from one student to another?

For each of the competencies, the materials and procedures for "measurement" and certification were spelled out. These procedures were the same for each student. In most cases the individuals responsible for certification of competence in a given area were appropriate people from the community --for example, an insurance broker or a bank officer. Any problems of variance of standards arise from variation among the opinions of the certifying persons, since the competency criteria typically stated "to the satisfaction of a _____." (CE)₂ staff minimized the problem this past year by contacting specific employers and other community members who agreed to be "designated" individuals for students to contact for competency certification.

GOAL

TO DOCUMENT STUDENT PERFORMANCE AND GROWTH ON THE BASIS OF CRITERION-REFERENCED MEASURES RELATED TO SPECIFIC INDIVIDUALIZED GOALS IN THE AREAS OF SOCIAL, COGNITIVE AND VOCATIONAL SKILLS

EVALUATION QUESTIONS

Are (CE)₂ staff able to measure, document and report individual growth on performance objectives in each component of the curriculum?

Performance objectives were used in two ways this past program year in facilitating student academic growth. The most important of these is the combination of a series of related objectives into projects in each of the life skills areas. These projects specified a series of activities which resulted in products--different for each student--to be completed to the standards of employers, community tutors and/or (CE)₂ staff. Although this represented a significant departure from traditional ideas of "scope and sequence" organization of learning activities, student growth in this context was reflected in the number of projects completed by the student during the school year. In addition, single performance objectives were written based on specifically identified student needs or interests. Summaries of numbers of projects and objectives completed are cited in Part V of this report.

Student growth, then, occurred primarily through setting individual learning goals and then working toward those goals on employer and community sites by completing a series of specially written projects and single objectives.

The task of recording and tracking student learning progress was approached by (CE)₂ staff in the following ways. A record of student activities and performance was kept by the (CE)₂ learning manager in a Master Record Book, the Student's Individual Record Book, a Master Project Book and folders containing the products of student projects.

- The Master Record Book contained summaries of the learning activities of all students and was used mostly by the learning manager for keeping abreast of total student progress.
- The Student's Individual Record Book contained complete information on an individual student and records pertaining to parent conferences, periodic reports to parents, the student's profile, an accountability record, a master numbers record of projects and single objectives currently assigned, a monthly status report of progress on all projects and single objectives, a competencies report form, a record of time

spent by the student on employer sites, performance reviews of the student by his employer and evaluations of the employer by the student.

- The Master Project Book contained copies of all projects and single objectives, organized by student.

Are there procedures for giving students systematic feedback on their own progress?

The area of feedback to students appears to be one in which improvement is needed in the next program year, particularly as relates to the evaluation of the products resulting from student projects. Feedback to students occurred mainly in three modes:

1. The learning manager attempted to meet weekly with each student to discuss progress on projects, single objectives and competencies. Reaction to employer sites and any other information or problems were also discussed at this time.
2. The learning manager reviewed with the student the report to parents prior to each parent conference. This report summarized attendance data for the reporting period, provided a status report on learning plans and included employer site evaluations.
3. Informal staff/student interactions occurred frequently at the (CE)₂ center.

Due mainly to the heavy developmental pressures, however, a significant time lag developed between those times when students turned in work from their projects and when the learning manager found the time to evaluate this work and provide feedback to students on it. Since the projects form such a central part of the curriculum strategy, a system to streamline this procedure has had high priority in the summer's program review sessions.

GOAL

TO DIAGNOSE BASIC SKILL LEVELS, CAREER INTERESTS AND ATTITUDES
OF EACH STUDENT WHO ENTERS THE (CE)₂ PROGRAM

EVALUATION QUESTIONS

Is there a plan for collecting and utilizing this information?

This information was collected in two ways:

1. A number of standardized instruments were chosen for use in program evaluation because they could also provide the (CE)₂ staff with diagnostic information on each student.
2. The staff also conducted systematic interviews with each student in order to establish baseline data in each curriculum area and then to use these data to set individual learning goals. Standardized testing results were thus combined with the students' opinions of the accuracy of these results and their perceptions of their abilities, needs and interests in each area.

The following standardized instruments were utilized in the (CE)₂ program:

- The Comprehensive Test of Basic Skills (CTBS) is a normative-referenced, standardized achievement test used to assess student ability in reading, mathematics and language arts. It was administered to students twice per program year, at the beginning and end of each cycle.
- The Tennessee Self-Concept Scale is a standardized, normative-referenced test used to help students determine the strength of their self-concepts. Like the CTBS, the Tennessee Self-Concept scale was administered at the beginning and end of each program year.
- J. Holland's Self-Directed Search (SDS) is a standardized test used to help students identify possible areas of career interest. Students were encouraged to take the SDS as many times as they felt it was useful to them in plotting their changing occupational and career preferences.

Results from the administration of these tests are reported in part V of this report, along with the results of other program evaluation outcome measures.

During an initial goal setting conference, the Basic Skills--reading, mathematics and communications--and six of the Life Skills--personal management, problem solving, functional citizenship, personal-social development, creative development and science*--were discussed in detail to determine where the student stood in each area. The manner in which these Basic and Life Skills were structured facilitated the interchange that took place during goal setting. Each of the nine areas was divided into elements, which described specific skills considered to be important facets of reading, mathematics, critical thinking and problem solving. These elements were further described by continuums that showed minimum and maximum levels of achievement students might reasonably be expected to attain. For example, one element of mathematics, "Basic Processes," is further described by the following continuum:

The student can add and subtract single column whole numbers consistently and accurately.



The student can add, subtract, multiply and divide whole numbers, decimals and fractions consistently and accurately.

Within this type of structure, the learning manager estimated where the student was in relation to each skill or concept and then set goals for that student, to be accomplished by the end of the year. The student's own perception of his or her needs, interests, style, capacity and rates of learning was balanced by the learning manager's assessment, based in part on standardized and diagnostic test results and in part on her professional judgment.

*Note that the Basic Skills and the Life Skills designations used here represent a refinement of the eight goal areas discussed on p. 23 and that some of the wording used in describing the Life Skills has been changed.

GOAL

TO DEVELOP UNIQUE LEARNING PROGRAMS FOR EACH STUDENT BASED UPON HIS NEEDS, INTERESTS AND ASPIRATIONS AND STATED IN EXPLICIT PERFORMANCE TERMS

EVALUATION QUESTIONS

Are there procedures for producing individual performance objectives in all areas of the curriculum?

The curriculum design for analyzing employer sites, writing performance objectives and structuring projects has been described in earlier sections of this report. In addition, the development of projects attempted to incorporate the following "guidelines" developed early in the year by (CE)₂ staff:

- The learning manager should consider--on the basis of the narrative she records for each student, spelling out the professional judgments or expectations regarding student growth--how the project builds on the student's efforts in previous projects.
- From the same narrative, the learning manager should consider how the project fits into a student's overall learning goals and career expectations.
- The learning manager should consider how the project can have the highest level of transferability. Learning activities should be designed to illustrate the relationship between what is learned specifically for a particular project and how that learning can be applied to other similar circumstances.
- The student's learning style should be carefully considered to determine whether group or individuated learning activities should be emphasized in the project.
- The learning manager should try to relate the project to Career/Life Skills* whenever possible, guiding the student's learning to an examination of total life roles.

*The "Career/Life Skills" designation now corresponds to two separate components of the curriculum--Life Skills and Career Development.

The following table shows the generation of projects for students finishing the first year of the program by "life skill" area. All projects generated by (CE)2 staff are listed, whether or not they were completed by the students.

Table 9

Projects Generated by the (CE)₂ Staff

		Creative Development	Functional Citizenship	Personal- Social	Personal Management	Problem Solving	Science	T
Baker	Junior			1	2	1	1	5
Brown	Junior	2	1	1	2	2	1	9
Crowder	Senior	2	2	2	2	2	1	11
Eisner	Senior	2	2	2	2	2	1	11
Gard	Junior		1	2	2	4		9
Gilliland	Junior				2	3	1	6
Gunn	($\frac{1}{2}$ yr) Junior			1	1	2	1	5
Hogan	Senior	2	2	2	2	2	1	11
Kaiser	Junior			1	2	4		7
Kenner	Junior	2	2	1	2	2	1	10
Lear	Junior	2	1	1	3	3	1	11
Loar	Junior	1		2	1	2	1	7
Miller	($\frac{1}{2}$ yr) Junior	1	1	1	1	1	1	6
Polston	Junior	1		1	2	2	1	7
Rider	Senior	2	1	2	2	1	1	9
Roberson	Senior	1	1	1	1	3	1	8
Rogers	Senior	2	2	2	2	2	1	11
Speer	Senior	2	2	2	2	2	1	11
Thomas	Junior	1		2	1			4
Weitzel	Junior	2	2	3	2	2	1	12
Wenzloff	Junior	2	1			2		5
Wheeler	($\frac{1}{2}$ yr) Junior		1		1	2		4
Winter	Junior	1		2		3	1	7
Totals		24	22	32	37	49	18	186

GOAL

TO INVOLVE STUDENTS IN EXPERIENCES WHICH ENCOURAGE THE
DEVELOPMENT OF A MORE POSITIVE SELF-CONCEPT

EVALUATION QUESTIONS

What kinds of activities were directed toward enabling students to develop more positive self-concepts?

One of the assumptions underlying the EBCE concept is that meaningful interactions with adults and other students will be constructive in helping students develop more positive feelings about themselves and their abilities. Hence all successful Level A and Level B experiences on employer sites summarized in Section V of this report should be considered as activities of this nature.

In addition to regularly scheduled program activities, two student "retreats" were held, with activities expressly designed to enable students to develop more positive self-concepts. The dates of these retreats and their objectives (which students helped to plan) are listed below.

Fall retreat, Camp McGruder

October 18, 19, 20, 1972

Objectives:

1. To create an open problem-solving climate throughout the project by identifying and working on those things which facilitate or hinder staff and students from working more productively.
2. To create a more friendly, reliable and open line of communication between staff and students
3. To help create esprit de corps

Spring retreat, Camp Menucha

February

Objectives:

1. Orient new students to the program
2. Help create a feeling of togetherness--the feeling of the group is that we are all spread out now
3. Create better communication

Also, a student training document was developed during 1972-73 and will be implemented during the coming year.

Have instruments and/or procedures been identified by means of which to assess self-concept and detect changes in it?

Two primary indicators function in this regard: one is the Tennessee Self-Concept Scale, a standardized instrument; the other is the employer evaluation form used by employers to give their estimates of the effectiveness of students on Level B placements. Results from each of these instruments are given in Section V of this report.

GOAL

TO ESTABLISH LEARNING ENVIRONMENTS AT A REPRESENTATIVE SAMPLE OF EMPLOYER SITES WHICH PROVIDE OPPORTUNITIES FOR DIRECT, FIRST-HAND OBSERVATIONS AND "HANDS-ON" EXPERIENCE

EVALUATION QUESTIONS

How many employer sites were necessary to handle our student population and how were they used?

By June 1973, 180 employers had been contacted. Of that number, 160 had agreed to make their sites available for student use. As of June 1973, 94 employer sites were being actively utilized by (CE)₂. The "active" file listed employers who had signed Letters of Intent to participate, whose places of business were available for appropriate educational experiences and whose businesses had been used by at least one student. Another 65 employers were identified as "inactive/potential" because they had agreed to participate but no student had yet explored their sites. A more complete analysis of the number and kinds of activities students were involved in at these employer sites is given in Part IV of this report.

Do we have a representative sample of the employers in the (CE)₂ program?

As shown in the accompanying table, all of the Standard Industrial Classification areas except for mining and wholesale trade are represented.

Table 13

Number of Active Employer Sites
By Standard Industrial Classifications

<u>Industrial Classification</u>	<u>No. of Sites</u>
Agriculture, forestry and fishing	6
Mining	0
Construction	3
Manufacturing	33
Transportation, communications, electric, gas and sanitary services	11
Wholesale trade	0
Retail trade	23
Finance, insurance and real estate	6
Services	73
Public Administration	7
Total	160

Are employer evaluations and/or certifications of skills, competencies or learning objectives useful in evaluating student progress?

Three modes of employer evaluation have become integral to the (CE)₂ program during this first operational year:

1. Employers' representatives were asked to certify accomplishment of most of the competencies.
2. Employers were sometimes asked to evaluate products of the projects students did on employer sites and provide feedback for student and (CE)₂ staff.
3. Employers were asked to fill out the Student Performance Review several times during a Level B placement of a student at their place of business (depending on the length of the placement). A detailed analysis of the data from the Student Performance Review is presented in Section V of this report.

Is there a plan for determining the effectiveness of employer sites?

A complete plan for this purpose was not developed during the first program year. From February through April, however, (CE)₂ employer relations specialists worked on a form to be used by students in reviewing the effectiveness of an employer site placement. Drafts of this form dated February 5, March 20 and April 5, appear in the documentation files; but such a form was never used in a systematic way with students or employers.

What percentage of learning activities and/or objectives were planned primarily by or with the employer or employer site tutor?

No significant percentage of learning activities was initiated or planned primarily by employers. However, the procedures which evolved over the year for the production of projects involved employer ratification of learning objectives in all cases. The employer interacted with the employer relations specialist in completing the Learning Site Analysis Form, so 100 percent of the learning activities occurring on employer sites were planned with the employers.

Are students getting the kinds of experiences they anticipated in career areas of their choice?

At the beginning of the school year each student (with the aid of the counselor and SDS results) worked out a prioritized list of four or five career areas they were interested in exploring. (CE)₂ records show that

for 23 students, 81 of their 92 listed "interests" were explored through either direct or related experience. (A related experience for a student who expresses an interest in zoology, for example, might involve his or her spending some time working with a veterinarian.) All of the 11 remaining choices were available through the present group of participating employers but were not pursued by those students who initially indicated interest in those areas. Six were choices of the three new students who entered the program in February. In the remaining five cases, students simply narrowed their interests as the year progressed and chose not to explore sites in which earlier interest was expressed.

GOAL

TO DEVELOP ARTICULATION STRATEGIES FOR CREATING AND MAINTAINING UNDERSTANDING OF AND SUPPORT FOR THE (CE)₂ PROGRAM AMONG:

- PARENTS AND OTHER COMMUNITY GROUPS
- SCHOOLS, COLLEGES AND OTHER EDUCATIONAL INSTITUTIONS
- EMPLOYERS

EVALUATION QUESTIONS

Have articulation strategies been developed, documented and implemented?

A number of articulation activities have been implemented during the 1972-73 program year. These activities evolved as separate independent efforts geared to meet various needs as they arose. A number of these activities are listed below according to the relevant publics.

Activities providing information to participant families included:

- Parent/staff/student conferences on student learning plans
- Parent/staff conferences on student progress
- The (CE)₂ newsletter Update! which was sent to parents
- Participation on "task forces" on program design
- Open houses and large group presentations to explain program progress
- Letters of general information on policy decisions
- Social events such as the mid-summer picnic for incoming students and families

Participant students kept themselves informed via:

- Structured program activities to plan and evaluate individual learning plans
- Weekly student meetings as part of student governance
- Miscellaneous bulletin boards, student mailboxes, feedback comments on student journals

- Employer site visits by (CE)₂ staff
- Informal conversations with (CE)₂ staff

Potential students received information from:

- Flyers distributed and posted at Tigard High School
- Large group presentations to interested students and parents
- One-to-one interviews and conversations with prospective applicants
- Brochures and descriptions for parents
- Open house for prospective students and parents
- Mid-summer picnic for new enrollees and their families

Employers were kept informed through:

- Personal contacts by (CE)₂ personnel, primarily students and staff
- Printed communications, including the Update! newsletter, general descriptive materials, information packet for potential employers
- Larger group presentations and open house on program progress
- Small task forces important to program development
- Letters and other materials, primarily feedback on student progress

Community tutors were kept informed via:

- Personal contacts by (CE)₂ staff
- The Update! newsletter

Citizens of the Tigard area, the metropolitan Portland region and the state as a whole all have reason to be interested in the development of (CE)₂. Procedures for providing this group with information included:

- (CE)₂ staff participation in civic organizations
- Open houses for interested citizens
- Brochures and descriptive materials sent on request

- Occasional press releases
- Display of (CE)₂ logo on stationery, van, student notebooks, learning center doors

A growing number of teachers and administrators in the general Portland area and throughout the region served by NWREL have expressed interest in (CE)₂. To meet these demands for information, several measures were applied:

- Occasional group briefings ranging from a handful of teachers from Portland School District to over 60 Oregon school board members and their administrators
- Personal conversations with single visitors
- Letters answering specific inquiries and usually enclosing general descriptive materials
- Update! newsletter, if requested.

In addition, contacts of varying depth were made with various educational institutions in the area. For example, interaction concerning translation of a student's accomplishments occurred between (CE)₂ and school districts other than Tigard whenever a student exited the program and enrolled elsewhere. In the limited instances when this occurred during 1972-73, the receiving school districts accepted the (CE)₂ director's description of the student's status and recommendations on placement into ongoing school courses. Relationships with two- and four-year colleges in the area did not go beyond the invitation of local institutional representatives to occasional planning meetings and informational briefings. Plans for reporting student achievement to postsecondary institutions were developed and will be tested during the 1973-74 program year.

The institution, other than the Tigard schools, with which (CE)₂ worked most closely during 1972-73 was the Oregon State Department of Education. Officials of the State Department of Education have worked closely with NWREL and (CE)₂ staffs during the first program year for two primary reasons:

1. Ultimate responsibility for the educational well-being of all Oregon students rests at the state level.
2. Many of the ideas and activities (CE)₂ is testing complement those of the state agency and its superintendent. One such interest is an accrediting system that is less descriptive of class contact hours and simple course titles.

Before the program could be formalized and students enrolled, approval of the pilot project by the State Board had to be assured. That approval was granted in June 1972, and liaison has been continuous. Two-year extension has been requested and approved.

The following table summarizes the kinds of information channels utilized this program year to reach the various (CE)₂ publics.

Table 11

Information Channels Utilized for
Various (CE)₂ Publics

(CE) ₂ Publics	Information Channels									
	Personal Contact	Newsletter	Open House	Small Group Meetings	Formal Presentations	Letters	Brochures	Social Events	Press Releases	General Descriptions
Students	X			X				X		
Parents	X	X	X	X	X	X		X		
Community-at-Large					X		X		X	X
Employers	X	X	X	X	X	X	X	X		
Area Educators	X	X		X	X	X	X			X
Out-of-State	X	X		X	X		X			X
Community Tutors							X	X		X

GOAL

TO DEVELOP A CENTER OF SUFFICIENT SIZE TO SUPPORT AND COORDINATE STUDENT LEARNING ACTIVITIES AND DETERMINE THE EXTENT TO WHICH IT MUST ACT AS A BACKUP SYSTEM TO PROVIDE EXPERIENCES NOT AVAILABLE THROUGH OCCUPATIONAL SETTINGS

EVALUATION QUESTIONS

Was a center for coordination and support of student learning activities established?

In July 1972, (CE)₂ signed a lease for a 2,466 square foot learning center in a one-story professional office complex just on the edge of the City of Tigard. The facility is leased for the projected development period. It is a carpeted, air-conditioned unit that provides study areas, materials storage areas, staff offices, a student lounge and space for small meetings.

Are students able to get instructional materials when they need them?

(CE)₂ staff report that they encountered almost no problems in securing materials once those materials were described. The problem, according to them, was the process of determining which materials were needed--i.e., appropriate to a particular job site--and whether or not they, in fact, existed. Once it was determined what materials the student needed, employers were most cooperative in providing whatever they had available.

Plans for next year call for an inventory of materials available at employer sites and the development of a bibliographic catalog of these resources.

Are there plans for determining the adequacy of the present (CE)₂ curriculum materials collection?

A plan for evaluation of the adequacy of curriculum materials has been developed this summer and will be implemented during the 1973-74 program year.

Is there a procedure for locating and cataloging community resource people for student tutoring roles?

In order to promote good public relations, to provide information about (CE)₂ and to recruit tutors from among the residents of the neighboring retirement community, King City, a brochure "Your Interests & Talents Are Valuable...We Need Your Help!" was printed up and distributed door-to-door by (CE)₂ students. (CE)₂ staff estimated that 1500 to

2000 of these were distributed. In direct response to this effort, between ten and fifteen individuals came in to the Center and expressed an interest in "helping." Their names and interests were filed in the Center's master tutor file. Eventually three of these individuals became tutors.

According to (CE)₂ staff, the single most effective method of locating and recruiting tutors was word-of-mouth recommendation by someone associated with the Center and subsequent personal contact with the recommended individual. This method became increasingly successful as the Center became more well known in the community and the number of personal contacts in the area increased. It was in this way that highly effective tutors in math, science and English were obtained. When (CE)₂ learned of a person who might be interested in becoming a tutor, a staff member met with him, explained the purpose of (CE)₂'s individualized approach and discussed the skill area in which the person was qualified. The "Tutor's Service Agreement" was then completed and signed by the tutor and the project director.

Is there a system for keeping track of students' locations? If so, how effective is it?

The (CE)₂ staff has experienced considerable difficulty during this program year in developing an effective system for tracking student locations. A December formative evaluation report states:

This seems to be a source of real frustration to the (CE)₂ staff. They have tried a sign-out board, weekly summaries, individual sign-out procedures with the learning manager, and the journal records. None have been successful in keeping track of students' whereabouts. The best data source thus far seems to be the journals, but these are inconsistent in what they contain from one student to another.

In early January, a "Student/Employer Accountability" system was implemented which included requirements that all students account for time spent at employer sites. Whenever possible, students were asked to utilize the same employer time clocks, time sheets, or similar methods of recording time as other employees used. If the employer did not have a system of accountability for his employees, the student was required to record starting and ending times on a "Weeks Activity Summary" sheet. A list was compiled by (CE)₂ staff each week indicating which students had turned in the required employer certification.

Analysis of this data shows that a majority of the students had difficulty in complying with these requirements. Many did not turn in time sheets consistently, so the records are "spotty" at best. In other cases, students let the obligation slide for several weeks at a time and then went to the employer for backdated verification of large blocks of time spent at an employer site.

How much of the student's learning time is spent on an employer site? At other community sites? In the learning center?

Evaluation staff attempted to combine data from the employer time sheet records, the learning center sign-out sheet and (CE)₂ staff records in order to establish the relative amount of time spent by each student at these learning sites. Due to the problems described above, fairly large blocks of time are simply unaccounted for.

It was anticipated that students would spend about half of their time on employer sites and half at the learning center. This approximate ratio is borne out in the data that is available. Discounting holidays, there were 100 possible "program days" since the accountability system went into effect. At 6 hours per day, this totals 600 hours of potential program time.

For each student, evaluation staff have compiled the total number of these hours accounted for at employer sites, other community sites and the learning center. The following table shows the average number of hours spent at each of these locations, including time unaccounted for by present recordkeeping systems and the percentage of the time represented by each of these categories.

Table 12
Distribution of Student Learning Site Time
According to (CE)₂ Records

	Learning Center	Employer Sites	Community Sites	Excused Absence	Unaccounted for by Present System
Average Number of Hours	171	186	18	30	186
Percentage of Total	29%	31%	3%	5%	31%

V. PROGRAM RESULTS

Following are some of the results of the first year (CE)₂ program operation, including data on resources available, student learning experiences and student growth. These results are divided into seven categories: employer learning sites, student learning experiences, student growth, employer appraisal, parent appraisal, student appraisal and outside evaluation.

EMPLOYER LEARNING SITES

The aspect of the (CE)₂ learning program most critical to its success centers on the group of employer sites used for student exploration and learning experiences. Following is a description of methods of employer site recruitment and selection, characteristics of employer sites and employer site usage:

Method of Selection

Employers were recruited for participation in the (CE)₂ program in a number of ways. During the spring and summer of 1972, an intensive campaign conducted by members of the original planning group resulted in an extensive list of potential employer participants. Additional participants were added during the year through contacts by participating employers, (CE)₂ students and their parents, Board members, Tigard school personnel, EBCE staff and members of local groups such as the City Council, Rotary Club, Education Committee of the Southwest Metropolitan Area Chamber of Commerce and the Tigard Mainstreeters Club.

When an employer had been identified as a possible program participant, he was contacted by the employer relations specialist (ERS), who explained EBCE, distributed program related materials, discussed the role of the employer and answered the employer's questions. In some cases, especially as the year progressed, the ERS met individually with employers at their places of business, but as often as possible this orientation function was performed at employer group meetings.

Employers who indicated continued interest at the time of this first meeting were again contacted by the ERS for an interview. During the second meeting the employer was oriented to program concepts and curriculum objectives in greater depth than had been possible in the group meetings. If the employer saw himself as a potential participant, he was asked three questions: (1) What do you do on your job? (2) What can a (CE)₂ student do on your job? and (3) How much time will you be willing to spend with the student?

On the basis of the answers to these questions, final employer selection was made and the firm or agency was entered in the learning center files for development as a learning site as needed.

Characteristics of Employer Sites

The recruitment and screening procedures described above resulted in 180 employers expressing initial interest in participation in the (CE)₂ program. Of that number, 160 agreed to make their sites available for student use. During the year, 95 of those sites were actually used by students. The fact that 65 potential sites were not used does not reflect on the willingness of those employers to participate. Rather, it reflects the fact that when site characteristics and opportunities were matched with student needs and interests, those 65 sites were not chosen for use. The sites used ranged in size from office of individuals, such as a doctor and a lawyer, to large and complex corporate operations such as General Telephone, Georgia Pacific and Tektronix.

As is indicated by the figures in Table 10, p. 43, employers have been very cooperative in participating in the (CE)₂ program. As a result, more sites have been available to students than have been needed to suit their interests and needs.

Employer Site Usage

The employer sites were used during the year for a total of 238 student placements--183 at the A Level and 55 at the B Level. The distribution of those student uses according to the Standard Industrial Classification is shown in Table 13.

The frequency of use of individual sites ranked from one to nine. Table 14 provides a frequency distribution of site usage.

Table 13

Use of Employer Sites

Industry Classification	No. of Sites Used	No. of Student Placements		
		A	B	Total
Agriculture, forestry and fishing	3	3	0	3
Mining	0	0	0	0
Construction	2	3	0	3
Manufacturing	14	27	12	39
Transportation, communications, electric, gas and sanitary services	7	15	1	16
Wholesale trade		0	0	0
Retail trade	14	32	9	41
Finance, insurance and real estate	4	13	3	16
Services	43	82	27	105
Public Administration	7	12	3	15
Totals	94	187	55	242

Table 14

Frequency Distribution of the Number of Users of Each Employer Site

No. of Users	Frequency
1	31
2	30
3	9
4	12
5	4
6	3
7	3
8	1
9	1
Total	94

STUDENT LEARNING EXPERIENCES

Students in the (CE)₂ program participated in a wide variety of learning experiences including employer site placements, projects, tutoring sessions, seminars and group meetings, independent study, enrichment activities and certification of competencies. The extent of student participation in some of these learning experiences is described below.

Employer Site Experiences

A large number of the learning experiences of (CE)₂ students took place on employer sites in the Tigard area. Those sites are described in the previous section. Table 15 shows the number of student employer site experiences according to the United States Office of Education Occupational Clusters.

Table 15
Employer Site Experiences
of (CE)₂ Students

HEW Occupational Cluster	Number of Student Experiences		Total
	Level A	Level B	
Agri-business	2	1	3
Business and Office	35	8	43
Communications and Media	19	8	27
Construction	7	1	8
Consumer Homemaking	18	1	19
Environment	0	0	0
Fine Arts and Humanities	0	0	0
Health	8	0	8
Hospitality and Recreation	2	0	2
Manufacturing	15	7	22
Marine Service	1	0	1
Marketing and Distribution	18	5	23
Personal Services	2	0	2
Public Services	32	15	47
Transportation	28	9	37
Totals	187	55	242

Students who were in the program the entire year participated in from three to twelve A Level experiences and from two to four B Level experiences. Table 16 shows the distribution of students on A and B Level experiences.

Table 16

Distribution of Students
On A and B Level Experiences

(Includes only the 20 students who participated in the (CE)₂ program the entire year)

<u>Number of Students</u>	<u>Number of A Level Placements</u>
0	1
0	2
1	3
1	4
2	5
4	6
1	7
3	8
3	9
4	10
0	11
1	12

Average number of A Level
Placements = 7.1

<u>Number of Students</u>	<u>Number of B Level Experiences</u>
0	1
11	2
8	3
1	4

Average number of B Level
Experiences = 2.5

Student Time on Employer Sites

One of the objectives of the (CE)₂ program was for students to learn through experiences on employer sites. In order to insure that students would spend adequate time on employer sites, a standard was established that students should be engaged, for two-thirds of their days in the program, in B Level learning experiences. This meant that students who were enrolled in the program the entire year would spend 117 days engaged in B Level experiences on employer sites. This was in addition to A Level explorations. The number of days spent by students in B Level experiences ranged from 69 to 146, with an average of 108.2. Six students met the standard of 217 days while fourteen did not.

Table 17

Time Spent in B Level Experiences
on Employer Sites

(Includes only the 20 students who participated in the (CE)₂ program the entire year)

Number of Students Meeting the 117 Day Standard	6
Number of Students Failing to Meet the 117 Day Standard	14
Range	69 to 146
Average	108.2

Projects

As part of their learning experiences, (CE)₂ students were involved in a number of individualized learning projects. Projects were interdisciplinary and provided the means to deliver learning activities, curriculum content and certification of student progress in the Life Skills. They were designed by the learning manager to fulfill individual needs and interests. The number of projects completed by each student during the year ranged from one to twelve. Table 18 shows the distribution of the number of projects (CE)₂ students completed during the year.

Table 18

Distribution of Projects Completed
By (CE)₂ Students

(Includes only the 20 students who participated in the (CE)₂ program the entire year)

Number of Projects	<u>Number of Students</u>	
	Juniors	Seniors
12	1	0
11	0	5
10	2	0
9	0	1
8	0	0
7	2	0
6	0	0
5	2	0
4	1	1
3	3	0
2	0	0
1	2	0

Each project was written for a Life Skill study target area. Table 19 shows the number of projects completed by Life Skill area.

Table 19

Number of Projects Completed by Life Skill Area

(Includes only the 20 students who were in the (CE)₂ program the entire year)

Life Skill Area	<u>Number of Projects</u>		Total
	Juniors	Seniors	
Creative Development	10	14	24
Functional Citizenship	6	11	17
Personal-Social	13	13	26
Personal Management	15	13	28
Problem Solving	20	11	31
Science	7	6	13
Total	71	68	139

Single Objectives

Another part of the learning experiences of the (CE)₂ students involved working toward narrow, specific learning objectives or, as they are called in the (CE)₂ program, single objectives. Single objectives are simple, clearly stated performance objectives that do not have to be sequenced or arranged into a set of activities. Primarily, they are written for students who have specific learning problems or who simply want to develop a single skill quickly. They are characterized by being (1) short-term--aimed at the development of quick, successful learning experiences, (2) aimed at skill building. Examples of single objectives include learning to use a slide rule because this was a skill required for a particular job and increasing reading speed because of an expressed need on the part of a student.

During the year (CE)₂ students worked on a total of 123 single objectives. Of that total, 107 involved work at the learning center and 16 involved activities at other sites in the community.

Tutors

The (CE)₂ staff arranged for a number of persons in the community to tutor students individually in various skills. Table 20 shows the areas in which tutors were available, the number of students tutored in each area and the number of hours of tutoring in each area. During the first program year, all but two of the students received some tutoring.

Table 20

Student Use of Tutors

<u>Area</u>	<u>No. of Students</u>	<u>No. of Hours</u>
Ceramics	0	0
Forestry	0	0
Macrame and Jewelry	5	8
Nursing	0	0
Arts and Crafts	0	0
Piano-Music	5	26
Spanish (2 tutors)	5	12
Electricity	2	13
Art	0	0
Music	0	0
Photography	0	0
Science	12	47
Vocal Music	1	4
Mathematics	17	335
Sewing	2	45
Reading	1	12

Drop-outs

Twenty-five students began the (CE)₂ program in September 1972. In October, one student returned to Tigard High School due to a feeling that the program direction was not what he had expected. In November, a second student left the program, moving to Idaho. In December, two other students left (CE)₂. One of these returned to Tigard High School. The other moved to Eugene, Oregon. At the start of the second semester, 4 new students were added to the (CE)₂ program, bringing the enrollment back to 25. In April, one of those new students dropped out of school completely. Seven seniors were still in the program at the end of the school year. Six of those completed the requirements and graduated in June. The seventh has been working toward completion of graduation requirements during the summer.

Thus it is concluded that the holding power of the (CE)₂ program was very good. Of the 29 students enrolled in the program during the year, 24 completed the school year, 2 moved to other communities, 2 left the program to return to Tigard High School and only 1 dropped out of school completely. This holding power is particularly significant in view of the fact that most of the (CE)₂ students had been "turned off" by the traditional high school instructional methods and curriculum.

STUDENT GROWTH

It is felt that the first-year (CE)₂ students grew in many ways, both in the cognitive and affective areas. Following are some indicators of that growth.

Basic Skills

The (CE)₂ students were given the Comprehensive Test of Basic Skills (CTBS) at the beginning and the end of the school year. As shown in Table 21, the students as a group remained exactly the same in reading and language and gained slightly in arithmetic.

Table 21
Beginning and End of Year Scores
of (CE)₂ Students on the CTBS (N = 21)

	Reading		Language		Arithmetic	
	Pre	Post	Pre	Post	Pre	Post
(CE) ₂ Group Mean	602	602	595	595	585	586

(In standard scale score units based on national norm; mean = 600, sid. = 100)

Self-Concepts

Changes in self-concepts of (CE)₂ students was measured through the administration of the Tennessee Self-Concept Test at the beginning and end of the year. The results are shown in Table 22. As the table shows, the students' self-concepts remained much the same. The increase in the self-criticism score indicates a greater degree of openness in responding to items on the test. This greater degree of self-criticism could account for the drop in "identity" and "physical self" scores.

Table 22

Beginning and End of Year Scores
of the (CE)₂ Students on the
Tennessee Self-Concept Test (N = 21)

Self-Concept Subscore	Percentil Rank of Group Mean	
	Pre	Post
Self-Criticism	58	60
Identity ("What I Am")	20	15
Self-Satisfaction	23	23
Behavior	9	10
Physical Self	17	10
Moral-Ethical Self	15	18
Personal Worth	43	46
Family Self	9	9
Social Self	28	28
Total Self-Concept Score	16	15

Career Maturity

In order to measure attitudes and competencies of the (CE)₂ students, the Career Maturity Inventory (CMI) was administered at the end of the year. The CMI measures the maturity of attitudes and competencies that are critical in realistic career decision making. Table 23 shows the group percentiles for the (CE)₂ juniors and seniors. Those percentiles are based on national norms.

Table 23
Career Maturity of (CE)₂ Students
as Measured by the Career Maturity Inventory

Subscore	Group Percentile	
	Juniors	Seniors
Attitude	34	30
Self-Appraisal	15	52
Occupational Information	33	78
Goal Selection	24	64
Planning	42	59
Problem Solving	34	66

Competency Certification

A list of 14 competencies or "survival skills" was developed for the (CE)₂ students. To become certified in a competency a student demonstrates skill and knowledge to the satisfaction of a person in the community qualified to judge that competency or to a member of the (CE)₂ staff. Each student who is in the program two years is required to become certified in each competency before graduation. Students who entered the program as seniors were required to be certified in seven competencies. Table 24 shows a distribution of the number of competencies completed by each student during the year. As shown in that table, the number of competencies completed ranged from zero to seven.

Table 24

Distribution of the Number of Competencies
Completed by (CE)₂ Students

(Includes only the 20 students who were in the program the entire year)

<u>Number of Competencies Completed</u>	<u>Juniors</u>	<u>Seniors</u>
7	2	6
6	0	1
5	0	0
4	0	0
3	1	0
2	3	0
1	6	6
0	1	0

Table 25 shows the number of students who completed each of the different competencies. The most popular competencies were Make Application for Employment and Successfully Hold a Job and File State and Federal Income Taxes which were completed by 15 and 12 students respectively. The least popular were Maintain the Best Possible Physical and Mental Health and Understand the Basic Function and Structure of Local, State and Federal Government, neither of which were completed by any students.

Table 25

Number of Students Completing
Each of the Competencies

Competency	Number of Students		
	Juniors	Seniors	Total
Transact Business on a Credit Basis	2	5	7
Maintain a Checking Account in Good Order	3	7	10
Provide Adequate Insurance for Self, Family and Possessions	1	1	2
File State and Federal Income Taxes	6	6	12
Budget Time and Money Effectively	0	2	2
Maintain the Best Possible Physical and Mental Health	0	0	0
Respond Appropriately to Fire and Police Emergencies	2	7	9
Participate in the Electoral Process	4	5	8
Understand the Basic Function and Structure of Local, State and Federal Government	0	0	0
Explain His Own Legal Rights and Responsibilities	1	1	2
Make Appropriate Use of Public Agencies	1	0	1
Make Application for Employment and Successfully Hold a Job	9	6	15
Make Appropriate Use of Leisure Time	0	5	5
Operate and Maintain an Automobile	0	3	3

Writing Skills

In order to assess improvements in the writing skills of the (CE)₂ students, a writing test was administered during the first and last six weeks of the program year.

For the pretest the students were asked to write about some of their experiences since the beginning of the program; for the posttest they wrote about their plans for the summer vacation.

Three high school English teachers were asked to evaluate the two samples as compared to average high school students. The judges did not know if the sample was the student's pretest or posttest. Ten criteria were used to judge each sample:

- Overall content organization
- Logical development
- Correct sentence structure
- Clarity
- Use of pronouns
- Subject-verb agreement
- Capitalization
- Spelling
- Legibility
- Punctuation

Each criterion could be rated as very poor, poor, fair, good and very good. Each rating was assigned a number value from one through five, respectively. For example, if a student was evaluated as very good on each criterion, then the total possible would be 50.

For each student, the three judges' ratings were averaged. Those results are shown in Table 26. Out of the 17 students tested, 10 showed some improvement in their writing, 2 remained the same and 5 regressed.

Table 26

Individual (CE)₂ Student Scores
on Beginning and End of Year Writing Test

Student	Total Score		Gain
	Pre	Post	
1	30.0	30.0	0.0
2	33.7	35.0	1.3
3	42.3	43.3	1.0
4	28.3	29.3	1.0
5	31.7	30.3	-1.4
6	19.7	18.0	-1.7
7	35.7	31.0	-4.7
8	34.0	36.3	2.3
9	27.7	33.3	5.6
10	23.3	25.7	2.4
11	26.0	31.0	5.0
12	30.3	28.7	-1.6
13	35.7	35.7	0.0
14	35.0	38.0	3.0
15	36.7	40.7	4.0
16	34.3	31.7	-2.6
17	25.0	31.0	6.0
Group Mean	31.2	32.3	1.1

Average scores for all 17 students on each criterion and the results of a t Test of the differences between pre and posttests are shown in Table 27.

Table 27

<u>Group (CE)₂ Student Scores</u> <u>on Beginning and End of Year Writing Test (N = 17)</u>				
Overall Content Organization	2.9	3.1	.2	*2.24
Logical Development	2.8	2.8	.0	.46
Correct Sentence Structure	3.1	3.3	.2	1.05
Clarity	2.9	3.1	.2	*2.45
Use of Pronouns	3.5	3.6	.1	.36
Subject-Verb Agreement	3.5	3.6	.1	.65
Capitalization	3.5	3.6	.1	.54
Spelling	2.7	3.2	.5	*3.07
Legibility	3.1	3.1	.0	.50
Punctuation	3.2	3.1	-.1	.20
Total	31.2	32.3	1.1	1.44

* Significant at .05 level ($t_{.05} = 1.75$)

As shown in Table 27, the students improved on seven of the criteria, remained the same on two and went down on one. The gains on three criteria (overall content organization, clarity and spelling) were significant at the .05 level.

The overall average for the entire group for the pretest was 31.2; the posttest showed an improvement to 32.3.

The reliability of this method of testing writing skills was checked by computing the coefficient of concordance between the ratings by the three judges and by computing the correlation coefficient between the pre and posttest scores. The coefficient of concordance between the three judges was .87. The correlation between pre and posttest scores for the students was also .87.

EMPLOYER APPRAISAL OF STUDENT PERFORMANCE

A form for evaluation by employer site representatives of student performance on employer sites was put into use in January 1973. The form was revised in March, and eight new scales were added. Between January and July, 75 evaluations were completed by 51 different employer supervisors for those students with whom they worked on B Level placements. In a few cases an employer supervisor rated the same student twice, but in most cases ratings on any given student were completed on a number of different employer sites by a number of different employer supervisors.

The final version of the evaluation form was composed of 22 separate criteria, or rating scales, grouped into four general categories--Attendance/Punctuality, Attitude, Learning Process and Performance. On each of the 22 criteria, the employer supervisors rated their students on a five-point scale--Needs to Improve, Improving, Satisfactory, Commendable, and Excellent. For purposes of analysis, numeric values from one to five were assigned to these scale ratings, and mean ratings were computed over all students for the entire year.

On the whole, students were rated relatively high by employer supervisors on all criteria. The overall average rating on the five-point scale was 3.66. The average ratings by category of criteria were:

Attendance/Punctuality	3.58
Attitude	3.74
Learning Process	3.61
Performance	3.63

On the individual scale criteria, highest ratings were given on:

Courteous, cooperative	4.50
Concerned for equipment/property	4.20
Good team worker	3.87
Shows interest and enthusiasm	3.85
Completes tasks assigned	3.80

Lowest ratings were given on:

Demonstrates appropriate dress/grooming	3.12
Seeks feedback concerning performance	3.19
Poise, self-confidence	3.21

PARENT APPRAISAL OF THE (CE)₂ PROGRAM

To obtain an evaluation of the program by the parents of (CE)₂ students, a questionnaire was sent to them at the end of the program year. The parents of 16 students returned completed questionnaires. Table 28 shows the results of the questionnaire. As indicated by their responses shown in the table, parents were very favorable toward the program.

Table 28

Results of Parent Questionnaire

Would you recommend this program for other students?

Yes 14 No 2

How do you feel your child's educational experience this year compares to their total educational program of previous years?

Stronger this year 10
Can't tell any difference 6
Weaker this year 0

Has your child shown any evidence of a change in career plans since the beginning of the school year?

Yes 11 No 5

Place a check between each pair of adjectives in the position which best describes your opinion about the extent to which the (CE)₂ program is:

Effective	13	2	1	0	0	Ineffective
	Very	Somewhat	No Opinion	Somewhat	Very	
Flexible	12	2	2	0	0	Rigid
	Very	Somewhat	No Opinion	Somewhat	Very	
Organized	8	0	3	0	0	Disorganized
	Very	Somewhat	No Opinion	Somewhat	Very	
Relevant	10	1	5	0	0	Irrelevant
	Very	Somewhat	No Opinion	Somewhat	Very	
Important	13	1	2	0	0	Unimportant
	Very	Somewhat	No Opinion	Somewhat	Very	
Practical	11	3	2	0	0	Impractical
	Very	Somewhat	No Opinion	Somewhat	Very	
Structured	9	3	3	1	0	Unstructured
	Very	Somewhat	No Opinion	Somewhat	Very	
Necessary	12	2	2	0	0	Unnecessary
	Very	Somewhat	No Opinion	Somewhat	Very	

Parents were also asked to make general comments about the program. Most of the positive comments concerned the career choices of their children and the staff-student relationship. Most of the negative comments concerned student freedom and perceived lack of discipline.

Typical comments were:

Her experiences at job sites have given her more insight into careers she couldn't have experienced in high school.

She didn't know what she wanted to do when she started the year but now has at least two definite careers in mind: social worker or medical secretary.

Prior to the start of school, he had no real idea as to what he desired for a career. He now has formed more definite ideas.

She has shown an added interest in photography and may want to pursue this as a career.

She still is not certain which of two careers to undertake!

Career plans have been changed from going to college upon graduation to going into on-the-job training.

They lack control of students' time. They have given the students too much responsibility too soon; that is, they expect them to use their time profitably without supervision. Some students are mature enough to do this, but not all.

Dislike obvious lack of student discipline. Dislike selection of students too immature to effectively schedule their own time.

From my casual observation it seems that the students waste time. This is probably depending on the individual--as most of this program does.

I would suggest that screening procedures be reviewed.

Be careful in choosing those who join the program. Some students could not handle that much freedom.

Teachers are very good and cooperative. This type of school with work experience, has given my son a desire to finish school and has kept his interest.

I'm extremely satisfied with the personal interest the staff shows in our daughter. Each one seems to accept it as a challenge to help her prepare herself for a career. With the placement of the student on the job sites, he gets a much closer look at the business world.

We think the program is great in that they can learn by doing, not just reading about how it is done.

The concern of the whole staff for the students and the help that is given in individual areas we have found to be outstanding. We think the program is really great.

We like the flexibility and freedom and the idea that the student is still responsible for completing his work by a certain date although it's more or less up to them to work out their daily schedule. We feel this is especially important if they plan to go to college.

I liked the special interest of the faculty in each child.

We are so extremely pleased with this program. The growth in our daughter from going through just this year has been tremendous.

Offers a good alternative for people who find the high school experience difficult or unacceptable to their needs.

STUDENT APPRAISAL OF THE (CE)₂ PROGRAM

In order to obtain student appraisal of the (CE)₂ program and to elicit student suggestions for program improvement, a two-day retreat with senior students was held in May. Six seniors were able to participate in the retreat. Following is a summary of the meeting results, including topics covered, student likes and dislikes, student recommendations and student votes on specific issues.

The (CE)₂ Learning System

Likes

Counselors

Provides enough learning opportunity

Room for individuality and originality

Students have voice in what and how they learn

Flexible scheduling (no bells)

Freedom

Dislikes

Too much paper work

Journals

Noise in learning center

Poor feedback on completed products

Difficulty in scheduling time with learning manager and staff

Takes too long to get projects written

Difficulty in interpreting the program to others

Recommendations:

Begin the year with more strict regulations regarding budgeting time, stricter starting time, designated time at employer site and accountability of where student is

Vote: Program has been excellent - 2, good - 3 and fair - 1

Projects

Likes

Having choice in content

Made for me

Can set length

Can set level

Can discontinue if not needed

Dislikes

Sometimes too long

Sometimes written only to meet a requirement

Number may be too many

Sometimes evaluated by outside people who don't understand

Likes

Can renegotiate completion dates

Can renegotiate content

Dislikes

Takes too long for certification and feedback

Sometimes told what is good for me

Recommendations:

To be able to negotiate the number of projects to be completed

Catalog projects for use by other students

Need better system to turn in projects

Single Learning Objectives

Likes

Participation in planning

Uncomplicated

Provide a feeling of accomplishment

Dislikes

Some are not interesting

Students don't seem to get credit for them

Not enough available resources for some

Students feel they get pushed into some of them

Recommendations:

Several single objectives should equal one project for credit purposes

Students should be provided more help in understanding objectives

Learning Materials

Likes

Learning center's
willingness to get
materials when needed

Dislikes

Difficult to obtain materials
Don't know what is available
Sometimes get run-around when seeking
materials
Hesitate to use employer's equipment
Some things needed for projects on employer
sites are not available

Recommendations:

Provide students with library cards for Portland Community College,
Tigard High School and Tigard City Library

Orient students to all materials and procedures for obtaining them at
the beginning of the year

Develop better checkout system

Competencies

Likes

Some are fun
Good learning experiences
Having outside people
certify

Dislikes

Some are dull
Parts of some seem useless
Lose interest because already can do some
Sometimes difficult to have outside people
certify
Certifiers sometimes too demanding
Takes too long for certification and feedback

Recommendations:

Improve certification process

Have certifiers come to the center and certify students in groups

Improve scheduling of certification

A Level Experiences

Likes

Gives a good idea of what job is like

Get to explore a number of jobs

The Exploration Package

Get to meet a lot of people

The employer relations specialist

Dislikes

Having to have an A Level before being allowed to have a B Level

Some last too long

Relationship with some employers

Employers do not understand the program well enough

Recommendations:

Orient students to the need to be open-minded and willing to explore

Begin A Level experiences early in the year

B Level Experiences

Likes

Stay in one place a long time

Really learn what job is like

Learn job skills

Get to use equipment

Close relationships with employers

Learn job entry requirements

Employers show trust in students

Employers develop confidence in students

Employers support the program

Dislikes

Some get dull after awhile

Some get too routine after awhile

Have to stay after you lose interest

Sometimes employers lose interest in students

After awhile employers spend less time with students

When a student becomes productive, he resents not being paid for work done

Learning center interference with site experiences

Recommendations:

Employers need to better understand the program.

Employer relations specialist needs to check sites more often.

Provide method for students to find things to do when the supervisor is busy.

Improve the time it takes to deliver learning objectives to sites.

Vote: B Level Experiences have been excellent - 3, good - 1, fair - 1 and poor - 1

Employers

Likes

Provide feedback on student success

Friendly

They have a plan and know what the student is to do

Provide good orientation to job

Access to equipment and materials

Helpful

They treat students with respect, like adults

Flexible

Dislikes

Some are disinterested

Some assign routine work

Some are not available

Recommendations:

Provide alternatives for days when employer is too busy to work with students.

Vote: Employers have been excellent - 2, good - 2, fair - 1 and poor - 1

Social Life

One of the greatest problems of the (CE)₂ program as expressed by the students was the lack of social activities as compared with the normal high school. Particular concerns were:

- They missed friends at the high school.
- They missed school activities such as assemblies, dances and athletics.
- They missed discussion of contemporary issues.
- (CE)₂ requirements make it difficult to participate in school activities.
- They didn't know what was going on at the school.

OUTSIDE EVALUATION

To obtain an outside appraisal of the (CE)₂ program, Keith Goldhammer, Dean of the College of Education at Michigan State University and Tom Sloan, Personnel Manager at Tektronix, Incorporated, were asked to conduct an onsite evaluation. They conducted that evaluation during April 1973. Their complete report follows in Appendix B. The Career Education staff found their report to be very useful in analyzing 1972-73 progress and in making plans for 1973-74.

Highlights of the Goldhammer-Sloan report are:

Strengths of the (CE)₂ Program

"The design is a sound structure appropriate for accomplishing the objectives."

"This program has been an outlet for their (the students') interests and concern for earlier involvement in the world of affairs, with a component which helps them explore and select a career most consistent with their potentials and aspirations."

"...there was little complaint and much support (by the students) because the studies were recognized to be relevant to their goals."

"The occupational sequence, from orientation, to exploration, to job entry is good...."

"...the pattern of instruction, particularly through the study target area, effectively established a foundation for sustaining interest in the program and the job. We particularly commend the staff for recognizing the difference between the skill building areas and the knowledge acquisition areas...."

"We could not associate, either formally or informally, with the students without noticing the high degree of motivation, both for the on-the-job experiences and for the related instructional activities which help to give meaning to the on-the-job experiences."

"The design gives to the student an opportunity to explore and select his area of career training based upon a knowledge of himself and the requirements of the vocation into which he wishes to work."

"The program, as now constituted, provides an interesting and exciting alternative structure for students who have lacked motivation in the traditional high school and who are turned on by their involvement in practical, on-the-job applications in association with adults in their affairs in the real world."

"It is apparent to us that there has been a considerable amount of very careful study and earnest analysis of the work of the students and a successful synthesis into a program ably designed to meet those needs. We are particularly impressed with the manner in which the staff has been able to devise instructional strategies which combine on-the-job experiences, academics and creative and expressive activities."

"The program appears to have minimized the threat of failure and placed emphasis upon helping every child achieve success in areas which are of most direct concern to him."

"The program has accomplished a high degree of individualization in accordance with the desired outcomes."

"The program is obviously responsive to students and to their individual needs."

"The program is achieving success as a result of the involvement of students, industry, government and business in overall design, operation and evaluation of program elements."

"One of the reasons for the success of this program is the emphasis that is placed upon helping the students retain their individuality rather than subject it to the mean or level of the group."

Weaknesses of the (CE)₂ Program

"It (the occupational sequence) is compressed into too short a period of time."

"There seems to be a lack of professional emphasis upon career guidance in the program."

"The system is almost bogged down in paper work, both for staff and for students."

"Probably the most serious problem is that each student has a feeling of being an independent cell within the program. There is a noticeable deficiency of group activities in the learning center, and we suspect a deficiency in the group reinforcement which should occur in a program of this sort."

"An adequate library is not available in the Learning Center, although several public libraries and school facilities can be used. The career guidance and career descriptive materials which should be a part of the program do not seem to be in evidence."

"We are very much concerned as to whether or not there is compatibility in the perspectives between R & D personnel associated with the program and the instructional personnel."

"The failure to integrate the program into the local school system can result in some very difficult problems, both for students and for school personnel."

"The major weakness appears to be that the program is an island in the educational community."

Recommendations

"We think this (motivation because of halo effect) needs to be carefully studied, and efforts will possibly have to be made from time to time to sustain the level of motivation which now exists."

"We would recommend that additional concern be given to various types of (student) self-analysis activities."

"It seems as though this program can result in a great strengthening of the individual's self-confidence. We would recommend that this be one essential aspect of the continuing evaluation of the effects of the program."

"It would appear to be highly desirable to reduce the amount of paper work or find a means through which it could be accomplished without the imposition that it now makes upon personnel."

"It would seem that for this program to be successful the electronic learning devices, programmed instructional materials, programmed packages in specific areas and self-learning techniques would be most important."

"Constant attention must be given to this problem (compatibility of perspectives between R & D and instructional personnel) to avoid the dysfunctionality which occurs when research and development govern the data and information systems, rather than the developmental needs of the students."

"It would seem that considerable attention would be given to the problems of orientation of students into the system."

"It would be helpful to them (employers) and a matter of their more complete involvement of the program if they had follow-up information on each of the students with whom they have had to deal."

"A parent organization for orientation, information, mutual reinforcement and program evaluation should be established."

"The employers should be given more adequate orientation about the local program...."

"It would seem that a realistic reorientation of the program might involve the student's deciding how much time he is going to spend in the Learning Center."

"The documentation process needs to be overhauled."

"The staff should consider the possibility of working with employer associations."

"It would appear desirable for explorations to take place with unions which operate training and apprenticeship programs and which can become a vehicle for strengthening the educational program for youths."

"It would seem that a part of the R & D effort should certainly be devoted to the development of explanations of critical contracts and terms so that more precise operating relationships among the various parties can be established."

"The role of the learning manager needs to be refined, and technical professional support personnel need to be provided."

"It is desirable that efforts be made immediately to explore earlier involvement of students in career development activities and programs."

VI. OPERATIONAL COSTS

An essential consideration in evaluating any educational system is the cost. Operational costs of the NWREL EBCE system are difficult to determine, precisely due to the developmental nature of the program and the contributions of employers which are not accounted for. In order to determine operational costs as accurately as possible, NWREL contracted with the Institute for Educational Management of San Diego, California, to establish a cost accounting system for the project and to develop appropriate methods of cost comparison. That work was done by James M. Thrasher, Claude C. Turner and Judith Borden. They developed a system for establishing operational costs and for comparing those costs with traditional school programs. The operational costs of the (CE)₂ program, as well as the cost for students in traditional high schools in the Northwest region, are presented in Table 29. All the costs presented in that table are per-student and are computed on an average daily attendance basis. The (CE)₂ figures do not include developmental costs nor the costs to employers of providing facilities for students. The (CE)₂ costs are obviously very high as compared with traditional school costs. One reason for the high per-student cost is the fact that only 25 students were involved in the (CE)₂ program. This small number of students results in an unusually high per-student cost for such items as program control and management and teaching staff. Another factor that resulted in high per-student costs is the fact that all instruction is individualized. This is much more expensive in terms of staff time and materials than normal classroom instruction. The high student transportation costs are also unique to this program since students had to be transported to many employer and other community sites. The costs for textbooks, library materials and audiovisual materials were also quite high. This can be attributed in part to the individualized nature of the program, which demands more instructional materials than a traditional program, and to the fact that there were no materials from previous years that could be used as would be the case for a program that had been operating for a number of years. In the (CE)₂ program, all materials had to be purchased new.

It is not anticipated that this program can be operated for the same costs as regular school programs. Individualization of instruction and other unique elements of the program preclude that. It is anticipated, however, that when the program has been operating over a longer period of time and with more students, the operating cost will be reduced considerably.

Table 29

**(CE)₂ Operational Costs Compared With
Regular School Operational Costs**

(Table 29 will be submitted under separate cover.)

APPENDIX A

COMPETENCIES

For 1972-73

A major element of the overall curriculum evaluation of (CE)₂ involves attention to basic competencies which graduates of a career education program should be able to demonstrate. These competencies constitute behaviors that reflect minimal functional requirements for living in today's society. As such, they have been generated from basic assumptions about what society expects of high school graduates. In the present case, the minimal competencies have been derived from the suggestions and opinions of parents, employers and educators in the local community.

The fourteen competencies represent specific examples of the types of abilities that reflect important aspects of adult life. These examples, each of which can be generalized to similar situations and abilities, have two crucial characteristics:

1. On the whole, successful demonstration of these competencies indicates not only adequate mastery of the basic academic skills of reading, writing and computation; but also skills in critical thinking and interpersonal relations.
2. The evaluation of successful demonstration, even in instances where the behavior in question is by necessity simulated, is made on the basis of criteria specified (and used) by working adults who are the people normally responsible for making such judgments in society.

The assessment of each competency requires the specification of the materials to be used, the level of achievement to be met and the method of evaluation to be utilized. In some cases, materials used will be precisely those which the student normally encounters in his present existence (e.g., physical health). In other instances, he will be presented with a simulated situation involving hypothetical data and problems (e.g., income taxes).

The fourteen competencies, which can be seen as representing economic, planning, legal-political, health-safety, property maintenance, recreational and occupational aspects of living, follow.

1. Demonstrate the ability to

TRANSACTION BUSINESS ON A CREDIT BASIS

By:

- A. showing a thorough knowledge of the terms and conditions which pertain to using a bank credit card
- B. completing satisfactorily a standard installment contract for a \$300.00 or more purchase

Materials and Measurement:

- A. The student will explain to the satisfaction of a bank officer the terms and conditions of the bank's credit card, including an exploration of credit limits and interest charges.
- B. The student will, when presented with hypothetical or real data about income and current debts, complete an installment contract to the satisfaction of a bank loan officer.

2. Demonstrate the ability to

MAINTAIN A CHECKING ACCOUNT IN GOOD ORDER

By:

- A. following the specified procedures for opening an account at a commercial bank
- B. maintaining an accurate daily balance and reconciling the check register and bank statement once per month

Materials and Measurement:

Using either his own or a sample checking account, the student will reconcile his balance to the satisfaction of a bank officer once per month for six months.

3. Demonstrate the ability to

PROVIDE ADEQUATE INSURANCE FOR SELF, FAMILY AND POSSESSIONS

By:

- A. selecting appropriate health and life insurance plans
- B. selecting appropriate automobile and property insurance plans

Materials and Measurement:

Given a set of hypothetical data about family members, possessions, income and age, the student will compare at least two alternate plans for each category of insurance. The student will then design a comprehensive plan of insurance coverage to the satisfaction of a professional insurance broker.

4. Demonstrate the ability to

FILE STATE AND FEDERAL INCOME TAXES

By:

- A. completing a W-2 tax withholding form
- B. completing an Oregon State Income Tax form
- C. completing a long and short Federal Income Tax form

Materials and Measurement:

Given a set of hypothetical data including income, occupation, interest payments, family deductions, property and age, the student will complete the required forms to the satisfaction of state and federal income tax officials.

5. Demonstrate the ability to

BUDGET TIME AND MONEY EFFECTIVELY

By:

- A. planning a trip
- B. planning a household budget

Materials and Measurement:

- A. Given hypothetical data including time and money available and destination, the student will plan a journey to the satisfaction of a representative of AAA.
- B. Using his own family and household for basic data, the student will plan a budget for three months to the satisfaction of a home economist.

6. Demonstrate the ability to

MAINTAIN THE BEST POSSIBLE PHYSICAL AND MENTAL HEALTH

By:

- A. developing and following an appropriate physical fitness plan
- B. showing a knowledge of major common diseases and health hazards
- C. passing a basic first aid test

Materials and Measurement:

- A. The student will outline and use a basic physical fitness program, including diet, to the satisfaction of a physical therapist for six months.
- B. The student will explain to the satisfaction of a health educator significant health issues, including major causes of death, venereal disease, mental illness, family planning and drug abuse.
- C. The student will successfully pass a basic first aid test.

7. Demonstrate the ability to

RESPOND APPROPRIATELY TO FIRE AND POLICE EMERGENCIES

By:

- A. designing a fire evacuation plan for his residence or an employer site
- B. showing a knowledge of procedures for citizen action in emergency situations

Materials and Measurement:

- A. The student will outline a fire evaluation plan, including emergency telephone numbers, to the satisfaction of a local fire officer
- B. The student will explain to the satisfaction of a police officer appropriate citizen action in at least five emergency situations.

8. Demonstrate the ability to

PARTICIPATE IN THE ELECTORAL PROCESS

By:

- A. completing a voter registration form
- B. completing local, state and federal sample ballots
- C. showing an understanding of the issues involved in a ballot measure

Materials and Measurement:

- A. Given hypothetical data about age, occupation, residence and information about candidates, the student will complete the
- B. registration and ballot forms to the satisfaction of the learning manager.
- C. Given two kinds of ballot measures, the student will discuss his analysis of the pros and cons to the satisfaction of the learning manager.

9. Demonstrate the ability to

**UNDERSTAND THE BASIC STRUCTURE AND FUNCTION OF
LOCAL, STATE AND FEDERAL GOVERNMENT**

By:

- A. showing an understanding of the obligations and prerogatives of elected officials
- B. showing a knowledge of the local, state and federal court system
- C. showing an understanding of the legal and extra-legal effects of interest group lobbying practices

Materials and Measurement:

- A. The student will select four categories of elected officials and will explain their functions to the satisfaction of a representative of each category.
- B. The student will explain the basic operation of the American judicial system, including the appellate process, to the satisfaction of a judge.
- C. The student will select an issue where lobbying efforts were clearly involved and will explain the effects of the lobbying efforts to the satisfaction of a professional special interest group lobbyist.

10. Demonstrate the ability to

EXPLAIN HIS OWN LEGAL RIGHTS AND RESPONSIBILITIES

By:

- A. showing a practical knowledge of basic constitutional guarantees
- B. showing an understanding of consumer rights and how to use consumer protection agencies

Materials and Measurement:

- A. The student will explain the substance and implications of the elements of the Constitution and Bill of Rights to an attorney.
- B. Given three hypothetical or real problems involving the abuse of a consumer, the student will explain consumer protection laws and the use of consumer protection agencies to the satisfaction of a representative of the consumer protection division of the Better Business Bureau.

11. Demonstrate the ability to

MAKE APPROPRIATE USE OF PUBLIC AGENCIES

By:

- A. completing application to Federal Insurance Contribution Act
- B. showing an understanding of benefits available from public agencies
- C. surveying public information available through local governmental agencies

Materials and Measurement:

- A. The student will make application for and secure a Social Security Card.
- B. Using hypothetical data the student will list, to the satisfaction of the learning manager, the benefits he would accrue at age 65 from Social Security and Medicare programs. (Benefits will be computed according to present reimbursement schedules.)
- C. Using hypothetical data the student will complete application for unemployment compensation.
- D. Using information available at the county courthouse the student will list the following information about his present place of residence:
 - 1. Assessed valuation
 - 2. Property tax amounts
 - 3. Zone designation

4. Type of sewer service
5. All assessment against that property (sewer, street lighting, fire district, water district, roads, etc.)
6. All covenants

12. Demonstrate the ability to

MAKE APPLICATION FOR EMPLOYMENT AND SUCCESSFULLY
HOLD A JOB

By:

- A. making an application with a private employer
- B. applying for employment through the State Employment Service
- C. complying with appropriate job dress, punctuality, production and safety regulations

Materials and Measurement:

- A. The student will prepare a resume, have an interview and be & hired by a personnel manager, employer or employment
- B. service counselor.
- C. Students will adhere to normal working conditions, rules and regulations expected of employees for a specified period of time to the satisfaction of the employer.

13. Demonstrate the ability to

MAKE APPROPRIATE USE OF LEISURE TIME

By:

- A. participating in leisure time activities

Materials and Measurement:

- A. The student will participate in two physical and two hobby & activities on a planned basis for a three-month period of
- B. time. The student will report on these activities to the satisfaction of the learning manager.

14. Demonstrate the ability to

OPERATE AND MAINTAIN AN AUTOMOBILE

By:

- A. securing both a learner permit and driver's license
- B. outlining the essential elements of an automobile maintenance program
- C. outlining safety and defensive driving techniques
- D. analyzing auto expense

Materials and Measurement:

- A. The student will pass the Oregon State written and driving tests to the satisfaction of the Vehicle Division Examiner and will secure a driving permit and license.

or

Upon parent request, the student will pass the written portion only to the satisfaction of the learning manager.

- B. The student will develop a maintenance program for a real or hypothetical automobile to the satisfaction of an automobile mechanic. The student will demonstrate the changing of a tire, replacement of fuses and describe winterizing techniques.
- C. The student will describe, to the satisfaction of a representative of the local police department, the emergency techniques used in case of auto failure on a freeway.
- D. The student will demonstrate defensive driving techniques to the satisfaction of a driver training instructor. (Except for student selecting second option in A above - then verbal explanation acceptable.)
- E. The student will list all of the costs of purchasing, insuring and maintaining for one year a real or hypothetical automobile, including interest, maintenance and depreciation costs to the satisfaction of the learning manager.

APPENDIX B

OBSERVATIONS OF THE EMPLOYER-BASED CAREER EDUCATION PROGRAM
(CE-2) CONDUCTED BY THE NORTHWEST REGIONAL EDUCATIONAL
LABORATORY

BY

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COLLEGE OF EDUCATION
MICHIGAN STATE UNIVERSITY
EAST LANSING, MICHIGAN

AND

THOMAS C. SLOAN
PERSONNEL MANAGER
TEKTRONIX, INC.
BEAVERTON, OREGON

MAY, 1973

Introduction

Tom Sloan, Personnel Manager of Tektronix, Incorporated, and Keith Goldhammer, Dean of the College of Education, Michigan State University, met at the CE-2 Center on April 24th to conduct an on-the-site examination of the employer-based course education program. In the course of these two days they interviewed the learning manager, the two employer relations specialists, the research and development team liaison person, the assistant superintendent for curriculum of the Tigard Public Schools, eight students, three parents of students, and six individuals representing various employers of students in the program. Obviously, the conclusions must be impressionistic, based upon certain values and previously determined points of view with respect to program orientation. The two examiners, however, are in accord with the statements made. It should be pointed out that the two examiners have very different backgrounds but similar perspectives on the functions of education. Both have had prior experience in career education programs and both have had considerable administrative experience which has involved program evaluation and interpretation.

Six questions were presented to the examiners by the Director of Career Education for the Northwest Regional Educational Laboratory. This report, prepared on the basis of our experiences in the Center, is in direct response to these six questions.

I. Does the design of the program seem appropriate for achieving the program's goals for students?

We will not review a description of the program to check our perception of it with the official documentation. We think we were able to see the program through the eyes of the participants. In our estimation, the design is a sound structure appropriate for accomplishing the objectives as we view them. In particular, we see the program as an important step forward in

providing an alternative educational structure for the high school student, with the following characteristics:

1) It provides on-the-job exploration of career opportunities for all students, in cooperation with selected industries, businesses, professional and governmental offices within the area. The students who self-selected this program did so to a great extent because they were turned off both by the textbookish curriculum of the high school and because they are "activists," desirous of being involved in the affairs of the adult, "real" world. This program has been an outlet for their interests and concern for earlier involvement in the world of affairs, with a component which helps them explore and select a career most consistent with their potentials and aspirations.

2) This program provides a range of studies, which in the traditional high school are termed "academic," but in this program are termed as either study targets or survival skills. These studies are supportive of the occupational interests and needs of the students. They arise out of the exploratory endeavors of the students on-the-job as a result of identification of their learning needs, concern for personal development, avocational interests, or for the completion of some requirements for graduation. Not all students are overjoyed with the projects in the academic areas of the curriculum, but there was little complaint and much support because the studies were recognized to be relevant to their goals.

3) Along with the exploratory and supportive studies, the program includes adequate opportunity for students to examine occupational training requirements in the event that they wish to continue in the areas in which they are engaged. The occupational sequence, from orientation, to exploration, to job-entry training is good, but it seems to these examiners that it is compressed into too short a period of time. It is, obviously necessary in this program to telescope some time as a result of the academic orientation

of the school experiences which have preceded this aspect of the program, but it is doubtful that all of the job entry skills (readiness for work) can be accomplished in a two-year period, even with the continued interest of business and industry.

4) It seemed to the examiners that the pattern of instruction, particularly through the study target areas, effectively established a foundation for sustaining interest in the program and the job. We particularly commend the staff for recognizing the difference between the skill-building areas and the knowledge-acquisition areas which are needed both to gain a general understanding of the nature of the environment in which the student lives and to acquire the specific skills necessary for coping with that environment.

5) One could not associate, either formally or informally, with the students without noticing the high degree of motivation, both for the on-the-job experiences and for the related instructional activities which help to give meaning to the on-the-job experiences. We have some concern lest this motivation be a halo effect, associated with the students' participation in a pilot program. We think this needs to be carefully studied, and efforts will possibly have to be made from time to time to sustain the level of motivation which now exists.

6) The design gives to the student an opportunity to explore and select his area of career training based upon a knowledge of himself and the requirements of the vocation into which he wishes to work. There is probably more emphasis in the program upon his acquiring knowledge of the nature of the job setting than of himself and his potentialities. We would recommend that additional concern be given to various types of self-analysis activities.

7) As previously indicated, the design calls for job-entry preparation. However, this aspect of the program seems to be compressed into too narrow a time zone. The problem, we think, results from the fact that the program almost amounts to a crash program in helping the student achieve awareness,

orientation, exploration, and training in too short a period of time, as a result of the program's being compressed into the two final years of senior high school. For maximum success, it seems to us that the program should be integrated throughout the entire realm of the school program, with particular emphasis in all of the grades of the junior and senior high being placed upon career development for all life roles and the related skills and understandings necessary for successful performance of roles. It should be noted that the students themselves were very deeply concerned about the degree to which the program and its short duration put a significant amount of pressure for production upon them.

8) The program, as now constituted, provides an interesting and exciting alternative structure for students who have lacked motivation in the traditional high school and who are turned on by their involvement in practical, on-the-job applications in association with adults engaged in their affairs in the real world. Perhaps this is part of the self-fulfilling prophecy of the program in that the students self-select themselves because the characteristics of the program are so deeply related to their own interests and motivations and provide an obvious relief for the anxieties which many of them feel in the traditional high school program.

II. What seem to have been the program's strong points for students during this first year?

It appears to these examiners as though the personnel who have operated the program during this first year have made a very strong attempt to provide an integrated program which focuses upon a broad range of growth needs of the students in the program. It is apparent to us that there has been a considerable amount of very careful study and earnest analysis of the needs of the students and a successful synthesis into a program ably designed to meet those needs. We are particularly impressed with the manner in which the staff has been able to devise instructional strategies which combine

on-the-job experiences, academics, and creative and expressive activities.

The program appears to have minimized the threat of failure and placed emphasis upon helping every child achieve success in areas which are of most direct concern to him. The students appear to be working successfully without the threat of failure as a result of goals which are primarily self-imposed.

It is apparent that the responsibility for learning is placed on the students who seem to accept that responsibility to a remarkably high degree. In fact, some of the students actually remarked to us that one of the things that they like about this program is the extent to which they, rather than the teacher, are responsible for what they accomplish.

The program has accomplished a high degree of individualization in accordance with the desired outcomes. It has been able to maintain almost complete diversification of projects and activities within the framework of the objectives and in accordance with the on-the-job experiences of the students. It should be pointed out that this has been achieved as a result of the efforts of the learning, in particular, and the cooperative efforts of the rest of the staff, which extend far beyond the call of duty.

It is interesting to note that the students selected this program as an alternative to the traditional high school program, and practically all of the students have elected to stay in the program and are enthusiastic about what they are doing within it.

The program is obviously responsive to students and to their individual needs. It is based upon a fairly systematic analysis of students' needs and the prescription of learning experiences in order to resolve problems of the student's ability to master those things which are of importance and necessary for him. It should be pointed out that the responsiveness is not only in relationship to the areas of career development in academics but also with respect to personal factors associated with the student's self-image, satisfaction, and employability.

The program is achieving success as a result of the involvement of students, industry, government, and business in overall design, operation, and evaluation of program elements. Also noteworthy is the degree of involvement of parents and the development of dedication on the part of all of the parties involved. It was indeed a pleasure to these examiners to hear parents, employers, and students talking about "our" program.

The Center has the resources to detect student needs and to provide the means through which these needs can be met. The Center is not hedged in with a number of bureaucratic roles which make it difficult to expend resources on things that sometimes might be considered peripheral to the mainstream educational experiences, such as paying the tuition for some girl who wants to reduce in a weight-watcher's program. It is indeed remarkable to view the extent to which emphasis is placed upon doing those things which are necessary to help the student achieve total fulfillment. One of the reasons for the success of this program is the emphasis that is placed upon helping the students retain their individuality rather than to subject it to the mean or level of the group. The students are very unique human beings, and this program has helped them not only to reinforce their own uniqueness, but to respect it in others. It seems as though this program can result in a great strengthening of the individual's self-confidence. We would recommend that this be one essential aspect of the continuing evaluation of the effects of the program.

We could not help but note the open communication among the staff, employers, students and parents. There was obviously an appreciation of the roles which each is playing, a mutual reinforcement, and a familiarity that extended to the casual use of first names.

We strongly suspect that the openness of the program and the degree to which individuals have achieved the ability to communicate about their problems has resulted in the elimination of a considerable amount of the static which normally develops within communication systems and school organizations. The result is that the individuals are able to work effectively in cooperation without personalities seeming to be a factor in getting in their way.

Students appear to be acquiring skills to cope with their problems, interpret their needs, and to become self-reliant in initiating structure to fulfill their needs and meet learning requirements.

III. What seem to have been the program's major weaknesses?

There seems to be a lack of professional emphasis upon career guidance in the program, although there was a counselor originally appointed as a member of the staff. When he left, this position was not filled. There was some concern on the part of both students and staff members that the counselor was too much clinically oriented and not enough oriented toward the career guidance needs of the students. There also seems to be almost complete emphasis upon the continuous interaction of the students with both the career manager and the employer relations specialist, but not periodical, systematic debriefing of the students so that the staff can better understand what has actually happened to the students in the course of their programs.

The system is almost bogged down in paper work, both for staff and for students. It would appear to be highly desirable to reduce the amount of paper work or find a means through which it could be accomplished without the imposition that it now makes upon personnel.

Probably the most serious problem is that each student has a feeling of being an independent cell within the program. There is a noticeable deficiency of group activities in the Learning Center, and we suspect a deficiency in the group reinforcement which should occur in a program of this sort. Students seem to feel the lack of informal social life and social activity which they had in the traditional high school and also the lack of attention to their physical development. Although they can participate in high school activities, they now constitute outsiders and, under the circumstances, to not feel as free to participate as they once did. Some of them, too, because they tended to be "loners" in the traditional high school, have no desire to return to that setting. This program has stimulated a greater amount of

social awareness and maturity but lacks the systematic means through which their newly awakened social interests can be expressed.

These examiners did not have an opportunity to assess the adequacy of materials available in the Learning Center for the students and the staff. An adequate library is not available to the students at the Learning Center, although several public libraries and school facilities can be used. The career guidance and career descriptive materials which should be a part of the program do not seem to be in evidence. A good career development library does not seem to be anywhere in evidence, and neither students nor staff referred to such materials. There is some hesitation upon the part of the staff to use academically oriented materials because these were so much responsible for turning students off in the traditional program. Students need to be able to use these materials as a resource in order to help them deal with their problems. Although staff report the availability, we saw no evidence of contemporary media or self-learning devices within the Center. It would seem that for this program to be successful the electronic learning devices, programmed instructional materials, programmed packages in specific areas, and self-learning techniques would be most important. If they do not want or do not receive proper use, careful study of the problem should be made.

We are very much concerned as to whether or not there is compatibility in the perspectives between the R & D personnel associated with the program and the instructional personnel. The liaison person is well attuned to both the instructional needs and the evaluation and research needs, but there is always a danger which must be avoided at all costs of letting the R-D and E requirements, rather than student needs, dominate the determination of various strategies. Constant attention must be given to this problem to avoid the dysfunctionality which occurs when research and development govern the data and information systems, rather than the developmental needs of students.

The failure to integrate the program into the local school system can result in some very difficult problems, both for students and for school personnel. One of these problems is the integration of the students with the

informal life of adolescents. Many students obviously are searching for other community activities as a result of their alienation from the main body of adolescents who are at the high school. The transportability of the program would seem to be at least significantly dependent upon the degree to which the students who enroll in such a program feel a part of the mainstream of adolescent culture. There is also some evidence of difficulty associated with transferring into and out of the program without penalty, due to the fact that the reward and the reward systems of this program and that of the traditional high school are incompatible. This results in this program being tolerated, rather than integrated into the structure of the public schools. Students feel the isolation, and there also is some evidence that they feel that there is some threat that the program which now constitutes the high school preparation for their life roles might be of short duration.

It seems that staff talk to each of the significant "others" in the program individually, rather than getting them all together. Students do not seem to be aware of perspectives of employers, other than the particular employer in whose site they are located. Parents do not meet with either employers or with students. Compatibility of perspectives can best be achieved through having some group sessions.

It is impossible at this stage to determine whether or not the study target and competencies areas are broad enough to encompass all of the learnings which are required for success in the program or the "survival" needs of students. It would seem to be highly desirable that special emphasis be placed upon the careful analysis and study of these areas.

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We are concerned about the implications for throwing the students into a sudden milieu of freedom after they have experienced the relative tight scheduling of the traditional junior and senior high schools. It is apparent that students have different levels of tolerance and readiness for the freedom and some criticisms of the way in which personal relations were handled.

Obviously, not all students are ready to achieve a state of self-responsibility for their learning. Some students desire direction and the security which results from adult domination. Some of them feel that they experience some unnecessary difficulties as a result of their being thrown cold into the situation without orientation and being able to penetrate into the program through successive degrees. It would seem that considerable attention should be given to the problems of orientation of students into the system.

The school district receives state aid for the students involved in the program, but provides no input into the program other than some modest administrative services. It would seem that one step in the integration of the program into the established pattern of school district operations, in order to make it a continuing alternative rather than a special unstable and terminable project, would be for a gradual involvement of the school district in the financing of the program, which the ultimate objective of the school district's taking it over totally from the Lab and the federal government.

Employers appear to be sensitive to the needs of their students and deeply concerned about them. They do not receive feedback about what happens to the students after they leave their sites. It would be helpful to them and a matter of their more complete involvement of the program if they had follow-up information on each of the students with whom they have had to deal. They also do not receive any feedback on the effectiveness of their relationships with students or of the instructional interactions which they make with students. They desire and obviously can profit from such feedback.

The school district does not appear to have any direct involvement in the program. Interest in the program has been expressed, but they have not been incorporated within any of the decisional structures. It would seem to us that this situation could desirably be rectified. There is a little evidence of State Department of Education involvement, but not much evidence that that involvement is very meaningful. We had no indication of any involvement of the local universities which are developing career education programs,

and it would seem to be a very short-sighted program which did not help them become involved and refine and improve their ability to mount adequate training programs to supplement the personnel needed in a variety of career education programs.

The major weakness appears to be that this program is an island in the educational community. It cannot survive as an island. It must be integrated in such a fashion that it is able to use the broader, professional resources of the educational community at the same time that it retains its unique alternative structure.

IV. To what extent does the program appear to have provided an adequate and comprehensive education for the students in the pilot group?

This question appears to have been answered in many of the comments made to previous questions. The question inevitably leads to a further question, adequate and comprehensive compared to what? It is obvious that it provides a far more adequate and comprehensive model of career development than the traditional high school program. It is also apparent that it is less adequate and comprehensive with respect to the social and physical development of the youngsters. We did not have an opportunity to view in depth how the program provides for all of the other social roles which the objectives of the program include. This is a question which can only be answered after very careful analysis of the total program.

V. To what extent has the program succeeded in building the educational experience directly from students' involvement in employer and community sites?

The program is built around on-the-site experience. It centralizes focus on on-site experience, but it does not necessarily arise out of it. The program was built in advance of the coming of students into the program. This is obviously essential. Students were involved in building the program,

as were other publics associated with it. It is not clear to us exactly how much involvement of parents and employers there was in the development of the program.

The most noteworthy aspect, however, arises from the fact that all of the students' projects arise out of their on-site experience and the student needs with respect to objectives of the program. I think it can be concluded that the program is remarkably responsive to the on-site and individual needs of students.

VI. What are your specific recommendations for the instructional program in the coming year? In addition to recommendations made throughout the report, we suggest the following:

1) A parent organization for orientation, information, mutual reinforcement, and program evaluation should be established. This organization should be kept informal and should probably include employers, as well as parents. It should be used as an advisory group, but the main purpose should actually be to provide information about the program so that parents can reinforce the efforts of the program staff, rather than become a barrier because of diverse points of view relative to what should constitute a proper high school education.

2) The employers should be given more adequate orientation about the total program so that they understand the inter-relationships of on-the-job training, academics and guidance. They should also be given more systematic feedback about their effectiveness and what happens to the students with whom they have had contact in the course of the program.

3) At the present time there does not appear to be any means for students' working on their own time schedule, rather than the established time schedule of the Center. It would seem that a realistic reorientation of the program might involve the student's deciding how much time he is going to spend in the Learning Center. The essential aspect of the program is not where he might be at any particular moment of time but how well he performs both the

on-the-site and the projects which he contracts to complete. It is also not significant whether the student spends two full years or eighteen months in the program. Some modification should be considered so that students might complete their assignments early and leave for regular employment before the normal time span or continuing for a longer period of time in the event that they feel it is necessary to gain all that the system has to offer.

4) The documentation process, as previously indicated, needs to be overhauled. We would recommend that a systems analyst be employed to determine how paper work might be handled more systematically and the impact upon personnel reduced. To date the system appears just to have grown in accordance with the exigencies and, apparently, has become excessive.

5) The staff is to be commended for the degree to which they have been able to maintain communication between various groups, but the reinforcement which could come from the interactions of the associated publics is not as highly developed and should be considered.

6) The staff should consider the possibility of working with employer associations. Although working relationships with individual employers seems to be good, the reinforcement and support that can come from employer's association such as the Associated General Contractors, the Oregon Printing Industry, and The Associative Oregon Industries and Labor Councils would be most beneficial in guaranteeing some permanence to the program.

7) Although problems have not as yet arisen with trade unions, they will if the program is to continue. It would appear to be desirable for explorations to take place with unions which operate training and apprenticeship programs and which can become a vehicle for strengthening the educational program for youths.

8) It is unlikely that the program can either be transportable or maintained unless it has a permanent, stable, instructional base from

which to operate. The program has been too much outside the framework of the school district or any other stable, institutional base. In reality, it is located neither in the schools nor in industry. As previously indicated, it seems to be an island unto itself. We assume that its greatest potential for transportability lies in its having a close association with the school system in the district in which it is located and recommend that that be explored. One of the greatest values of the program is that it constitutes a legitimated alternative to the traditional high school. Its linkages should be so established that the tax-supported public school system has an unavoidable obligation for its continuation.

9) There are contracts and items which have to be used in programs of this nature which are not as yet well-defined. For instance, there has to be a definition of the students' relationships to the employer and to other employees as well as to the Center staff. Terms which might become the barriers to the effective continuation of the program when problems arise now are not necessarily defined with the specificity which either students, staff, or employers can use in their decision-making. It would seem that a part of the R & D effort should certainly be devoted to the development of explanations of critical contracts and terms so that more precise operating relationships among the various parties can be established.

10) The role of the learning manager needs to be refined, and technical professional support personnel need to be provided. The learning manager has broadly diverse responsibilities, and, because of her dedication, she is obviously putting in a great deal more effort than could be described as within the bounds of duty. One of the problems is that the learning manager has to be all things to all students. Twenty-five students is not an economical unit upon which to operate a program. With fifty students there will be greater potential for economy of operations, but still not a completely economical unit to operate. However, additional personnel will have to be provided so that a team effort can be mounted and one individual will be relieved of the

extreme breadth of responsibilities which now fall on her shoulders. We are equally impressed with the work and dedicated effort of the other staff members. Their roles, too, need to be constantly evaluated and refined.

11) We think that, in spite of the excellence of the work that is being done, the career development concept cannot become the dominant concept of an educational program only in the last two years of high school. It is desirable that efforts be made immediately to explore earlier involvement of students in career development activities and programs. The development of the program in the junior high school with a meshing of aspects of the program at all levels of the school system would appear to be desirable. It is doubtful if any system so isolated from what has gone before or what will come after it could be successful over an extended period of time.